Executive Summary

Environmental Data and Information: Summary Findings from EPA Region III Public Sector Needs Identification Team Meetings

The EPA Region III Public Sector Needs Identification Team recently conducted a series of five moderated public meetings to characterize public and stakeholder needs for environmental information. These meetings were designed to be consistent with a more comprehensive analysis conducted in the Fall of 1997 by the Center for Environmental Information and Statistics (CEIS) and the Environmental Monitoring for Public Access and Community Tracking Program (EMPACT) at EPA Headquarters in Washington, D.C.

Information Intermediaries and Users

The CEIS/EMPACT work revealed that there are at least three types of users of EPA information: stakeholders who use the information directly, information intermediaries who serve as information sources for various stakeholders, and stakeholders who do both. In the Region III groups, small business owners are generally direct users of EPA information; whereas librarians and media groups are strong examples of information intermediaries; they present an important and unique perspective for better information management. The environmental educators and local environmental groups represent stakeholders who act as information intermediaries and as end-users of EPA information.

Drawing on the CEIS/EMPACT study, the Region III groups focussed heavily on the role(s) of information intermediaries, as well as end-users, seeking ways to better manage information flow to stakeholders. Each of the five groups focussed on different stakeholder categories: librarians, media representatives, small business owners, local environmental organizations, and environmental educators.

This report recommends several areas of need as a result of the stakeholder elicitation process. These needs include self-reported items from each group (in the form of a "wish list"); items of continuing interest from the CEIS/EMPACT survey; needs that emerged through analysis of the overall process; and responses to an end-of-group questionnaire. These needs form the basis for a series of final recommendations:

- Create directories and printed references;
- Advertise and promote information resources;
- Write using "lay terminology" and develop simplified information acquisition procedures;
- Expand educational programs beyond Philadelphia to reach a greater number of suburban and rural areas around the region;
- Establish regular face-to-face contact through regularly scheduled workshops, weekly briefings, and conferences;
- Design high-tech/high-touch solutions, which include improving Web site and other technology management along with offering access to personal guidance and support;
- Improve access to and amount of local information; and
- Partner and collaborate with information intermediaries.

Environmental Data and Information: Summary Findings from EPA Region III Public Sector Needs Identification Team Meetings

Overview

The EPA Region III Public Sector Needs Identification Team recently conducted a series of five moderated public meetings to characterize public and stakeholder needs for environmental information. These meetings were designed to be consistent with a more comprehensive analysis conducted in the Fall of 1997 by the Center for Environmental Information and Statistics (CEIS) and the Environmental Monitoring for Public Access and Community Tracking Program (EMPACT) at EPA Headquarters in Washington, D.C. The CEIS/EMPACT survey included over twenty moderated public meetings across the United States (and Puerto Rico), including a broad range of Federal, state, local, NGO, industrial, and commercial information users and providers. The Region III meetings build upon the national survey and move to a higher level of detail for Region-specific challenges and solutions in information management. The Region III qualitative research looked broadly at information management and attributes important to five specific types of users of EPA information:

- Librarians,
- Media/Reporters,
- Small Business People,
- Small Environmental Organization Leaders, and
- Environmental Educators.

The broad goals of the meetings were to characterize and assess customer needs and preferences for environmental information by determining:

- Specific environmental information needs and desires,
- Normal and preferred information acquisition methods,
- Barriers to acquisition,
- Strengths and weaknesses of current EPA public information services,
- Information needs common across stakeholder groups,
- Recommendations for improving public access to Regional Office and Headquarters' environmental information, and
- Similarities and differences between the CEIS/EMPACT and Region III findings.

The following summary report is derived from information and analyses contained in the "top-line" reports from individual discussion groups, results of post-group questionnaires used to characterize technology access, and information priorities of participants in each group. The individual reports, presented as Appendix I of this report, cover:

- Participants' information "wish list,"
- Experiences with environmental information,
- Problems with EPA information,

- Issues of special concern to the participants as stakeholders,
- Any commentary specific to EPA and Region III, and
- A list of participants and EPA observers.

This report highlights and summarizes important findings from individual reports. It also offers an assessment of preferred methods of information acquisition, common needs, a review of the special needs of information intermediaries, a review of EPA needs, and discussion of eight areas of focus for information management that were developed into a number of final, concrete recommendations for Region III. Appendices include: a compendium of individual summary reports; results from the individual post-group questionnaires; group-by-group reviews of the end-of-group questionnaires, or *Information Inventory*; and a comparison of the CEIS/EMPACT meetings.

Final Recommendations

Analysis of stakeholder preferences, information intermediary considerations, and EPA information needs reveal eight areas for EPA action.

1. Create directories and printed references,
2. Advertise and promote information,
3. Write using lay terminology and develop simplified information acquisition procedures,
4. Expand educational programs beyond Philadelphia to reach a greater number of suburban and rural areas around the region;
5. Establish regular face-to-face contact through regularly scheduled workshops, weekly briefings, and conferences,
6. Design high tech/high-touch response systems,
7. Manage local information to make it more accessible and useful to the public, and
8. Partner and collaborate with information intermediaries.

Summary Findings

Analysis and comparison of the individual top-line reports suggests several priorities from among the five "Wish Lists." Two items recur among all the individual wish lists: better promotion of data and information and transparent access channels. Frequently, groups articulate other priorities that reinforce the two principal issues. The wish lists also highlight issues that are common to a majority of groups including: a desire for information in lay terms, educational programs, person-to-person networks, increased emphasis on regular face-to-face contact through meetings and workshops, and improved management and access of local information. The summary findings also explore the role and needs of information intermediaries. The CEIS/EMPACT analysis identified information pathways that include information intermediaries such as librarians, the media, or associations who process information before passing it along to their own stakeholders or constituents. The librarian and media groups in Region III offered especially valuable insight about how to best approach the needs of information intermediaries.

Each of the major "wish list" items are discussed below.

Promotion of Data and Information

The public meetings confirm that many people simply do not know what data and information EPA has, and/or where to go within the Agency to find information on a particular topic. In some groups, participants were unable to name a single EPA data or information product aside from vague references to the EPA Web site. Promotion of data and information revolves around the need for EPA to let the public know about its available information, how it can be useful, and how to obtain it. Groups recommend conventional approaches such as newspaper advertisements and bus posters. They also suggest efforts focussed on their own stakeholder group, such as advertising or articles in specific journals for librarians or sending science and environmental educators flyers on brightly colored paper to inform them of new resources.

All-Group Wish List

Analysis of all the groups discussions and their wish lists reveals six priority areas for EPA improvement.

Two principal issues recur among all five groups:

- Data promotion and
- Clear access (to an information clearinghouse, to people, to the Web sites).

Other issues are common to a majority of groups:

- Information in lay terminology,
- Educational programs,
- Person-to-person networks,
- Regular face-to-face contact, and
- Local information.

Transparent Access Channels

The Environmental Protection Agency is a large, complex, and geographically dispersed organization. People express a great deal of frustration with trying to find EPA information. Stakeholders want clear access channels to EPA and mention several ideas. Two groups specifically want an information clearinghouse or "one-stop" facility for environmental information. All of the groups express a desire for better access to the "right people" to answer questions and help obtain needed information. For example, the media group is adamant about needing a way of knowing who to contact to quickly obtain information on late-breaking stories. Other groups want "real people" to ask for information. Many identify a need to better understand EPA's structure, and most request directories that include information on the mission of EPA and its individual Offices and Programs, as well as distinctions between EPA responsibilities and those of other regulatory offices at Federal, state, and local levels. Finally, all groups seem to want improvements to the EPA Web site. While groups such as librarians acknowledge recent improvements, they and other groups still believe the site can be more accessible, easier to navigate, and more user-friendly.

In addition to data promotion and clear access issues, there are several items that most of the groups (three or more) define as priorities. These items include communicating information in lay terminology, educational programs, person-to-person networks, and regular face-to-face contact.

Information in Lay Terminology

Many of the groups call for simpler, easier to comprehend information, "so *I* can understand it." As a worthy first step, they suggest that EPA avoid using jargon and acronyms. One group recommends a "thesaurus" to identify obscure terminology. Such a thesaurus would include not only a definition of technical terminology and acronyms, but also background information on the context or meaning, e.g. what is dangerous. The call for such a thesaurus exemplifies the claim

that EPA data and information should be better and more widely promoted. The EPA Web site already contains a comprehensive glossary of terms; however, it is difficult to find and poorly labeled.

Educational Programs

Educational programs are a priority for several groups, although the focus differs from group to group. Librarians suggest a program geared toward students of all ages to educate them about EPA and its activities. Leaders of small environmental organizations are interested in learning more about environmental issues and getting field exposure to issues through EPA-facilitated partnerships. Environmental educators are interested in better educational offerings for their K-12 students, and they are also interested in graduate school work and credit for certain types of programs and efforts. Groups argue that educational programs need to be broad and rich in their offerings, with a strong understanding of differing stakeholder needs. In many cases it appears that the need for better information could be partially satisfied if stakeholders were made more aware of what the Agency already offers; as is certainly the case for educational materials and programs.

Person-to-Person Networks

Many participants emphasize the need to find, establish, and strengthen networks of people who can help stakeholders find, access, and interpret information. Several participants are clearly tapped into networks on which they heavily rely for information. Some members even go so far as to say that they will not look for information if they do not "know somebody." The participants view networks as crucial to tracking information and being aware of new developments. Even people who report having a substantial existing network of people to call on welcome the chance to strengthen and multiply their connections.

Face-to-Face Contact

Participants mention meetings such as annual workshops, conferences, press briefings, and public meetings as vital to the development and maintenance of strong information networks. These meetings offer EPA a dependable opportunity to establish relationships and effectively begin the process of disseminating information to the general public. These contacts also offer stakeholders a dependable means to connect with each other, third party information providers and users, and the EPA. Each of these connections are critical elements involved in stakeholder information management.

Local Information

Many participants want information that is categorized in terms of specific geographic areas. For example, librarians say that the most frequent and unfulfilled requests they receive are for information on the quality of specific local streams and water bodies, educators are interested in local water quality data such as dissolved oxygen rates in different part of the Chesapeake Bay, and small businesses require better explanations as to how regulations vary in different localities. Again, much of this information already may be available, but is difficult for stakeholders to retrieve or to apply. This need for local information may be partially satisfied if the Agency were to promote information more widely and present it in a more usable format.

Information Intermediaries

Participants in the Region III discussion groups amplify a critical finding from the CEIS/EMPACT survey, that EPA is often only a single link in an environmental information chain. Industry, state and local government agencies, a variety of NGOs, community-based organizations, and academic institutions are all involved in the development and dissemination of environmental information. Intense moderator probing during the public meetings resulted in participants discussing their role in the information chain, including where they go for data, what value they add, and where they, in turn, disseminate the value-added information. It is important to distinguish between final information users and intermediaries. Intermediary information providers may be comfortable with or even demand electronic access to data. However, end-users are probably much less likely to acquire information in this manner, relying instead on traditional media or even word of mouth.

Of the Region III groups, small business owners are generally direct users of EPA information; whereas the librarians and media groups are strong examples of information intermediaries, and they present an important and unique perspective for better information management. The environmental educators and local environmental groups represent stakeholders who act as both information intermediaries and as end-users of EPA information.

Librarians

Librarians have different perspectives, depending on the type of library they represent. University librarians and government librarians emphasize research and provision of data and information to researchers, college and graduate students, and scientists. These librarians express a need for improved promotion and better access to technical and "raw" data sets. These librarians also ask for manipulable data, e.g., in an electronic spreadsheet, so that researchers can evaluate and process information independently.

By contrast, public librarians are heavily focussed on providing information for K–12 students and the general public. According to these librarians, their customers need interpreted data, support, and contextual information. For example, students often search for information to support science fair projects and other curriculum-based activities. The public is frequently interested in information referred to in the news or local and community environmental quality issues. With regard to quality issues, their focus is often on spatially- and/or contextually-specific questions such as, "How safe is the water in my well?"

Media Interests

The media representatives are important and unique as information intermediaries. The media group emphasizes issues related to EPA information management and their particular needs as reporters. As a group constantly meeting deadlines, they have special needs in terms of timeliness and information acquisition. Specifically, they request the creation of a media guide to offer contact information and information offered in a manner similar to what a PR firm would do — media alerts, press releases, and fact-filled briefing materials.

Local Environmental Groups

Local environmental groups have concerns that relate to both their ability to obtain usable data and information from EPA and their ability to manage and understand information for themselves

and the public. In this group, there is a great interest in having the EPA facilitate partnerships between environmental organizations to better use and share resources.

Environmental Educators

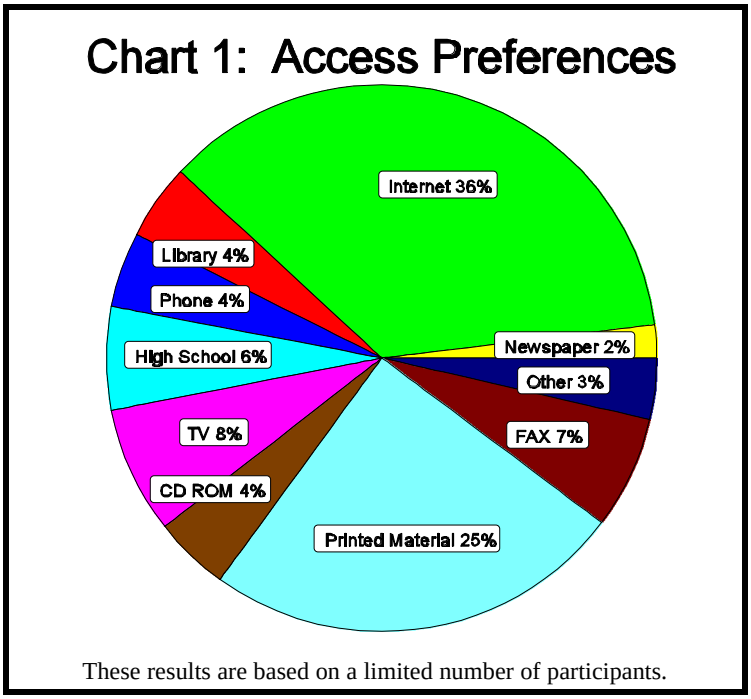
Environmental educators desire information from EPA as both end-users and disseminators. This group requires support for better connection to EPA information, wants to contribute to EPA information to make student-collected data more meaningful, and needs support from EPA to better develop educational curricula for their students.

Business Interests

Participants in this group are predominantly interested in regulatory information and guidance as end-users. However, they find it difficult to deal with EPA as both a neutral information provider and as a regulator. They fear that information requests could raise red flags, leading to compliance-related inquiries or inspections. Participants suggest that EPA construct and abide by a separation of functions through which stakeholders can seek environmental information without fear of compliance-related repercussions. Participants say that industrial and commercial associations frequently operate as intermediaries and as a shield between members and regulatory agencies. In this way members can ask an association to request data or ask regulatory- or compliance-related questions on their behalf while maintaining anonymity, thus not throwing up a red flag.

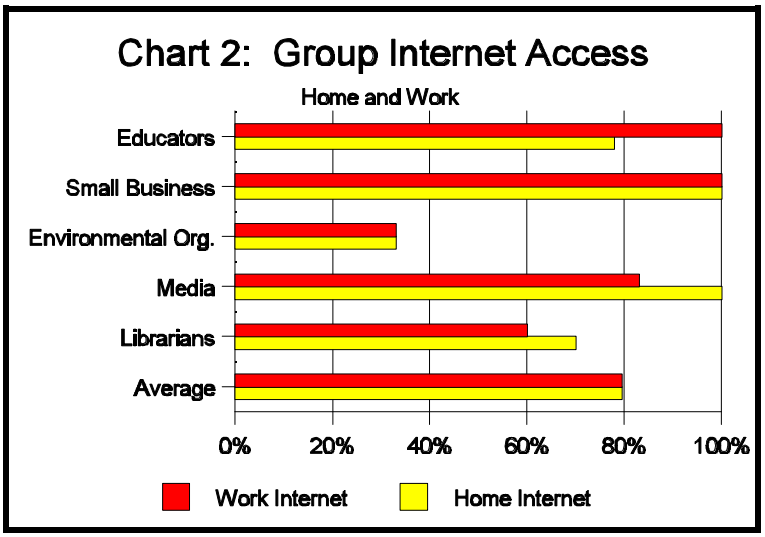
Information Acquisition Preferences

Participants discussed a range of issues in the group setting. They were also provided with an opportunity to comment on these issues as individuals by responding to an end-of-group questionnaire. The individual questionnaires have been compiled in an *Information Inventory*. As indicated by Chart 1, the Internet and printed material are the preferred vehicles for receiving information. Of 89 responses for the top three most important types of information access, participants choose the Internet 32 times and printed material 22 times as the best way to acquire information. The Internet also tends to dominate much of the group conversation about information acquisition. Several participants have time limitations related to their information needs, and see the Internet as vital to acquiring information in a timely manner — however challenging it may be to actually find the information.



These results are based on a limited number of participants.

As Chart 2 indicates, Internet access varies somewhat from group to group. (The environmental organization group contained only three people and should not be considered representative.) However, participants note that rural organizations or libraries may have very little or no Internet access. Some participants fear that too much emphasis is being put on the Internet as a means of information distribution, and argue that promotion of the Internet comes at the expense of other, more conventional, methods of information distribution. It is these so-called "conventional" modes of outreach that group members believe still have an important place in information management, especially when dealing with the "Internet underprivileged." These more conventional methods include books, journals, magazines, and other printed material. In addition, the media group is uniquely interested in receiving faxes and press releases for information on breaking environmental stories.



These results are based on a limited number of participants.

As previously mentioned, personal networks remain absolutely critical to providing information in a timely and reliable manner. Participants indicate they are more likely to obtain information in a timely manner if they know someone in the Agency. In some cases, participants will not even try to find information if they do not have a personal contact.

EPA/Region III: Some Concerns

The stakeholder elicitation process utilized by Region III resulted in both qualitative and quantitative characterizations of public sector information needs. Although input from the process was almost always constructive, and the participants were enthusiastic and appreciative of EPA efforts to identify and address their needs, the series of public meetings did reveal some troubling items for EPA consideration:

- The EPA Region III process originally called for six groups, with one group to be made up of pediatricians. This group was ultimately canceled, because although 50 practitioners were contacted, only one indicated a willingness to attend. This suggests a weak connection between EPA and an important potential ally and partner, the public health community.

- The local environmental organizations group lost all of its EPA-recruited attendees and survived only as a "micro-group" comprised of three self-recruited individuals. This too suggests a weak link in the environmental information chain, or a lack of connectivity between EPA and a key partner, local environmental organizations.

- During the environmental educators group, teachers spoke knowledgeably about the varied types of information they need and/or would like to receive; however, aside from a few confused and vague references to the EPA Web site, they could not identify, by name, any EPA information products or services. No group named more than four EPA information products and/or services.

- The small business group indicated that they tend not to contact EPA for information, because they fear an inquiry will trigger an inspection or violation notice, and, as they put it, "do not trust EPA."

- The average overall rating of EPA as an information provider is 4.4 on a scale of 1 to 10, with 1 as worst and 10 as best. While this rating is broad, non-specific, and undifferentiated, it nevertheless communicates a high level of customer dissatisfaction.

This convergence of troubling results adds urgency to the group results, and led PERI analysts to highlight the following areas for Region III to address:

- EPA needs a better knowledge of certain networks, particularly groups important to its mission, such as local environmental groups and public health practitioners, throughout Region III;
- EPA needs to understand and use appropriate intermediaries to make its messages more effective; and
- EPA has to improve public and stakeholder awareness of EPA products.

These factors help to shape the final recommendations for action as we look for solutions and planning strategies that will produce win-win results for EPA and its customers.

Final Recommendations

The analysis of the individual groups, comparison with previous CEIS/EMPACT Phase III groups, the *Information Inventories*, and EPA areas for improvement reveal eight areas of focus for EPA to consider as it approaches its information management architecture.

1. Create and widely disseminate directories and printed references;
2. Advertise and promote information;
3. Write using "lay terminology" and develop simplified information acquisition procedures;
4. Expand educational programs beyond Philadelphia to reach a greater number of suburban and rural areas around the region;
5. Establish regular face-to-face contact through regularly scheduled workshops, weekly briefings, and conferences;
6. Design high-tech/high-touch solutions, which include improving Web site and other technology management along with offering access to personal guidance and support;
7. Manage local information to make it more accessible and useful to the public; and
8. Partner and collaborate with information intermediaries.

These eight areas translate into some specific items and recommendations to meet stakeholder and Region III needs.

Printed references

Each of the groups requested some type of printed directory, cross-referenced by several areas including: geography, program area, mission, and industrial code. Participants want several ways to reference and contact *real people,* including names, phone, fax, E-mail, subject matter expertise, and in the case of the media group, after hours and weekend contact information. Specific items for Region III consideration follow:

> To meet the needs of librarians, educators, and local environmental groups, one directory could organize Region III information by program/responsibility, be cross-referenced by items such as geography, and include contact information for key staff members who can answer general and specific questions about the program's purview. Creating such a directory would involve gathering contact information that may already exist for each program office and compiling it into one complete document. The directory should be published in hard copy and on the Internet, with each version referencing the availability of the other.
>
> Another directory could be organized around media concerns, that is, to reach knowledgeable EPA staff members who are both readily available and quotable. If not done already, Region III program directors could assign one or more staff persons to be regular media contacts; EPA staff who are already involved in communications and public relations as part of their day-to-day work and who are accustomed and able to quickly return phone calls are good candidates. Contact information for these staff members could be submitted to a central location for compilation into a "media guide." Addresses and contacts for local papers, radio, and television stations could be sought and collected into a mailing list, and these guides could be distributed and updated frequently.

While there is still much interest in the Internet as a tool of the future, participants clearly point to low-tech solutions for their immediate issues with finding people, contacts, and information resources throughout EPA. Though mundane, these products and their worth should not be underestimated. And by all means, specific names of contacts should be provided.

Advertising Information

All the participants agree that EPA should employ outreach that includes regular and publicly visible advertising of its data and information resources. When pressed for specific examples, participants turned to "standard media" such as TV, radio, and print advertising as well as outreach in stakeholder-focussed publications, such as a journal for science teachers. Advertising the availability and location of the Region's data and information need not be extravagant or costly. Specific items for Region III consideration follow:

> Simple one-page direct mailings or postcards a few times a year advertising new publications, annual reports, and/or local EPA-sponsored conferences and educational programs would improve communication and nourish person-to-person networks. Development of a mailing list could begin with a simple and

inexpensive compilation of names and addresses of known contacts/customers in each program area in each office around the region. Initial contacts could be asked to forward the mailing to other interested parties in the Mid-Atlantic Region, who could in turn be added to the list. At times it may be more appropriate and/or cost-effective to send information out through information intermediaries such as local associations (see recommendations for Information Intermediaries below). In addition, the Internet could be used to develop an "E-mail-advisories" list.

Region III could also submit short print advertisements/articles to intermediary media, such as newsletters for associations, school districts, and other government agencies. Short articles could include existing materials such as press releases and executive summaries from larger reports or research projects.

Lay Terminology and Simplified Information Acquisition

The results of the *Information Inventory* show that within and across stakeholder groups there is significant variation in educational backgrounds, levels of Internet usage, and age of the participants. EPA must, therefore, take care in designing information so that it can be understood by all types of users, such as avoiding use of acronyms and jargon. This issue also reflects a need for context when acquiring information, especially for the general public. The public wants to answer questions about the world around them, and basic environmental questions such as, "What is global warming?" With regard to acquisition, many participants who use the EPA Web site agree that the site is difficult to navigate and is not organized in a way that is clear and understandable to the lay person seeking environmental information and knows very little about EPA's internal organizational structure. Specific items for Region III consideration follow:

While Region III may have little control over the writing of regulatory information and the structure and navigation of the Federal EPA Web site, the Region could implement a Regional policy stating that all information provided in any publication, including material published on the Internet, must use language simple enough for the average citizen to comprehend and apply to personal and typical business situations.

Region III could develop and make available and promote a printed edition of EPA's "Terms of Environment," currently available on-line.

Region III could develop special, simple Web pages for targeted stakeholder groups, such as educators and small businesses, that would enable them to find the types of information they need easily and quickly. These pages could feature new information and updates. For example, the small business page could be updated to include changes in regulations that affect small businesses, with links to other relevant information already available on the site. Pages for educators could contain current local environmental news, announcements about Regional events and offerings, and links to sites that provide good, proven classroom projects and ideas.

Region III could also reorganize their portion of the EPA Web site in a way that makes information easier to find, rather than having to develop new pages. In order to figure out where the current problems reside and where improvements can be made, Region III could perform Web site "beta" testing. Such an approach could employ "usability heuristics," where participants, as part of a group meeting, surf the Web site on their own while being prompted by facilitators to talk about their reactions to the site, its content, and functional characteristics.

Educational Programs

Stakeholders are eager for a variety of educational programs. The participant focus of programs runs the gamut from Kindergartners to Ph.D.'s. While EPA cannot be all things to all people, the public clearly sees EPA as having an obligation to educate and offer context to environmental information. In addition, while there are a variety of environmental curricula available, teachers often find that what is available caters to the wrong age groups, or does not have adequate testing and explanation of the 'lab portion' of the educational units. These frustrations require additional effort and research on the part of environmental educators in the curriculum development process. Specific items for Region III consideration follow:

Region III constantly faces issues of limited funding that prevent it from organizing a great number of educational programs and offerings. Because of these limitations, many educational events are conducted locally, in Philadelphia, with familiar contacts and are not expanded to the rest of the region. As a first step, Region III could begin to attempt to reach areas outside of Philadelphia by offering parallel programs in another area in the Region each time an event is arranged locally. While budget limitations may initially require reducing the frequency of local outreach activities, it is imperative that EPA reach out more aggressively to other areas in the Region.

If budget limitations make it impossible for Region III to immediately expand its education outreach, it may consider making telephone or direct mail announcements through information intermediaries to spread the word to stakeholders around the region. A number of people may be willing and to use their own time and resources to travel to worthwhile events if they are given adequate advance notice.

Region III may also find a few on-line options within its budget. For example, Region III could schedule a one- to two-hour monthly on-line chat between an EPA expert and interested stakeholders on varying topics of interest. This type of "virtual" meeting or workshop can offer another avenue for stakeholders to learn about a topic and ask an expert questions in a group setting.

Face-to-Face Contact

Almost all groups indicate that regular meetings can be an important, and often forgotten, catalyst for communication and effective information transfer. These meetings include anything from annual workshops, requested by environmental educators and local environmental organizations, to weekly briefings, requested by the media group. Regular meeting practices offer the physical

presence, contacts, and interaction with experts that many of the stakeholders say they require and from which they would clearly benefit. Specific items for Region III consideration follow:

> In light of budget constraints, such meetings do not only have to be sponsored by Region III. Upper-level staff from each program office in Region III could be encouraged to attend at least one meeting or event sponsored by trade associations, local environmental groups, or school districts each quarter. These meetings could include locations outside of the immediate local area in order to expand the Region's outreach, allow Region III to make new contacts, and improve stakeholder networks outside of the Philadelphia area.
>
> To better accommodate media interests, Region III Public Affairs staff may consider short, regularly-scheduled conference calls/briefings (bi-weekly) with groups of news media representatives in different areas of the region to update them on potential stories such as new research results or upcoming events and press conferences that may be of interest to the general public.

<u>High-Tech/High-Touch Balance</u>

The CEIS/EMPACT analysis revealed a general appreciation for the Internet. Participants say they want the best, most useful Web site possible, however they are also afraid that they will get stuck. The Region III groups frequently echo this finding from the national groups. They appreciate the Web site improvements, but also want: a more omnipresent search engine connection; clear navigation to educational support, industry sectors, educational items, and raw data; and offer a way to contact real people who could support information retrieval and management. In conjunction with these Web site improvements, participants are unanimous in wanting support from real people. Specific items for Region III consideration follow:

> The printed directories discussed above could clearly support the "high-touch" desires of participants. It could also be as simple as putting contact names, E-mail addresses, *and* phone numbers on key pages of the Internet site so customers could call for information about the material published there. It would also be helpful to simply include on every page of the Web site the latest date that the data and/or information was altered or updated, since stakeholders are often confused about the timeliness of the data. A link to the search engine on every page would also simplify searches for information.
>
> With regard to more technical questions on using the Internet, Region III can explore partnerships with states and other information intermediaries that already have well-established assistance services, and can electronically and verbally redirect questions of a technical nature to these organizations.

<u>Local Information</u>

Groups repeatedly remark on their desire for information identified by location. Librarians often have customers asking about the water quality of streams running through their backyards; the media is interested in the local application of national issues and local issues that have an impact on public health and economic welfare; small businesses want to have a better understanding all of

the regulations pertinent to their location and the differences in regulations between localities; and environmental educators need local environmental data for use in lessons and indoor lab projects, and wish to compare local water quality data from their own lab experiments with results of other schools. Specific items for Region III consideration follow:

> EPA could offer local information on its Web site through its existing databases. However, the information would be identified in ways that are meaningful to stakeholders and the public in Region III, such as by zip code or street address. Once again, this issue could also be addressed by better promotion of existing EPA information tools such as "Surf Your Watershed," "Envirofacts," or the CEIS "Profiler." Making local information more accessible via the Internet could be combined with other efforts, such as "high-touch" and promotion, to help customers access the information.

Information Intermediaries

Information intermediaries will be useful to Region III in accomplishing many of the recommendations already addressed. In particular, intermediaries can be used to advertise, distribute, and help stakeholders interpret EPA information. Region III representatives can also try to get on the agendas of regularly scheduled intermediary group meetings for regular face-to-face contact. Specific items for Region III consideration follow:

> The issue of information intermediaries emerges as an extremely serious issue for small business owners, who do not want to contact EPA for information. Small business owners repeatedly comment on their need to talk frankly with someone they feel will not attack them for doing something wrong, but rather advise them on how to do it right. Here, EPA could forego direct contact with small business representatives, and instead filter information through intermediaries such as trade associations. In many cases, such associations will be able to "piggyback" EPA brochures and announcements onto their own mailings, or distribute EPA information at regular meetings. Some information intermediaries mentioned in the discussion with small businesses include: Auto Body Service Professionals; Pennsylvania Dry Cleaners; American Electroplaters and Surface Finishers Society; National Association of Metal Finishers; and local Chambers of Commerce.
>
> This same recommendation would also be helpful to science and environmental educators, who frequently receive information through their associations as well as not-for-profit environmental organizations. Associations mentioned in the discussion with educators include: Maryland Association of Environmental and Outdoor Educators, Maryland Association of Science Teachers, Maryland Association of Biology Teachers, and Maryland Science Supervisors Association. Other non-profit organizations and events include Chesapeake Bay Trust; Chesapeake Bay Foundation; and Aquatic Resources Connection.
>
> As information intermediaries who also use environmental information, local environmental groups could act as partners to help distribute information to groups

and contacts within their own networks and other interested parties that contact their organizations for information. Such partnerships will help Region III expand regional networks and allow for cost-effective, targeted distribution of information.

Appendix I
Individual Summary Reports

Region III Public Meeting 1 — Librarians Charlottesville, Virginia February 23, 1999

Background

In October 1998, the EPA Region III Public Sector Needs Identification Team launched an assessment of customer needs and preferences for environmental information. This assessment involved a series of five facilitated public meetings conducted in cooperation with the EPA Region III office. Each meeting investigated a different stakeholder group, its current information gathering methods, its information needs, special issues for the stakeholder group, and investigation of the Customer Information Process (CIP) and Information Attribute (IA) priorities for the group.

The CIP and IA analysis tools were developed in 1997 for an EPA customer study conducted by the Center for Environmental Information and Statistics (CEIS) and the Environmental Monitoring for Public Access and Community Tracking (EMPACT) Program. This study sought to characterize customer needs for environmental and health-related information, preferences for accessing information, and interest in having more time-relevant monitoring and reporting capabilities. The CIP/IA framework is described in more detail below.

Summary Statement

The public meeting in Charlottesville, Virginia brought together public, university, and Federal agency librarians and other information service representatives, including one environmental planner from a local Planning District Commission and a Program Director of a non-profit environmental education organization. The group agreed that *Access EPA* and EPA's recently improved Web site were services that were most helpful to them. There was consensus that EPA should clearly identify the staffers responsible for information within EPA as well as other agencies and organizations. The group focussed on acquisition and integration of information, and much of the discussion revolved around the usefulness of electronic versus printed formats. Internet access varied across the group, and the more experienced Internet users implied that the Internet should become the dominant mechanism to house and access environmental information. However, some members of the group were concerned that EPA did not have a mechanism in place to archive data that was only published electronically. All participants agreed that EPA must continue to manage their current and historical information in such a way that all libraries and users may continue to access it regardless of their level of computer expertise or access to the Internet.

Wish List

The group strongly agreed that EPA could improve their provision of information services by: recognizing and acknowledging different levels of various users (academic versus average citizen) and the need to supply services for the lowest common denominator as well as the technical user; developing an educational mission and public relations campaign; and developing a centralized point of access to both printed and electronic formats of all information and data produced by EPA on regional and national levels. These three specific goals were developed by the group as a summary of their more extensive "wish list:"

- Better promotion of EPA data;
- Central point of access to all of EPA's current and historical environmental research and information;
- Clearinghouse of local and regional contacts for information, internal and external to EPA;
- An updated version of *Access EPA* that is free to public libraries and available in both printed and electronic formats;
- Glossary (thesaurus) that defines terms and jargon;
- Presentation of all information in laymen's terms;
- Educational programs for kids and adults that explains the EPA mission and goals;
- Development, maintenance, and improvement of the EPA Web site; and
- Some combination of printed and electronic data formats for EPA data and publications.

Information Experience

The group's discussion highlighted that specific, local information was most often requested by local citizens. However, Federal and state EPA data did not include this level of specificity, and questions remained largely unanswered. As one participant pointed out, "The most frequent . . . unfulfilled request that we get is how to get data on a very specific kind of stream or water body. With EPA's Web site you can now put in ZIP Codes . . . for whatever the watershed area is that you're looking for, but it doesn't help me with the little creek that runs behind my house." Participants agreed that when looking for geographic data, going to a state agency for information proved to be more successful than going to the local or Federal level. A member added, "The local governments aren't responsible for gathering the data and don't tend to have the data, and when I've tried looking on a Federal level, I've mostly found that the data came in larger geographic areas than I was interested in."

In addition, the group discussed that local citizens often required instruction on where to look for information because it was not clear what agency or office was responsible for any given situation. One member stated, "What the person calling needs is a road map on what EPA is in control of versus DEQ versus the Planning District versus a small non-profit versus my neighborhood association." One participant suggested that a context be provided that would explain why certain information is developed by one agency or another. "I think it really helps people to understand why EPA does certain types of reports and why Fish and Wildlife does others. And it helps people to know which agency to go to."

The group strongly agreed that *Access EPA*, a publication that tells who is responsible for different areas within EPA, was an incredibly useful tool for directing clients to and within EPA. One participant captured the group's strong feelings about this document when he stated, "*Access*

EPA was the single greatest tool, at that time, that EPA ever put out for those of us who were trying to get information to other folks." While *Access EPA* is currently available via the Internet, many requested that they also receive an updated printed version of *Access EPA* as they once had in the past.

Attendees also stated that there was no one specific place or person that they often turned to for information, however they tended to find what they need informally through their personally created networks, which included local contacts and colleagues in the area. They occasionally garnered other contacts through national meetings of associations. One referred to this as "the good old underground network" they built locally and extended nationally.

Participants briefly discussed timeliness of data, commenting that people "want tomorrow's results today." Members joked that if a report was on ABC News, citizens would definitely walk into the library the next day requesting to see it.

Problems with EPA Information

Much of the discussion focussed on how to make environmental information more meaningful to the public. There was strong agreement among the participants that most public users were less interested in the raw data, and more interested in the analysis of the data and final conclusions. It was noted that EPA's Web site required more explanation of the data and information contained on the site so that a lay person could understand how the information was personally relevant. One attendee said, "I think for many of our users, if not the majority of users on the community level, they want some sort of conclusion drawn from the data or at least a statement that some trend is shown here." With regard to how EPA's Web site handled the transfer of information to the user, one participant stated, " . . . there was nothing there on that Web page that I saw that I could click on to explain what PCB was or what percentage was bad or good." This participant suggested that EPA add a legend to explain what is "good or bad" about the data being presented. Members stressed that users needed a certain depth of explanation and also strongly suggested that a glossary of terms or thesaurus on the Web site would help their clients develop a context for the information.

Special Areas

There was some agreement that access to information was greatly facilitated by the growth and development of the World Wide Web, and that the Internet became a very important tool for librarians. One participant remarked, " . . . I think electronic files are becoming more and more important . . . " However, there was strong consensus that a diversity of approaches to the presentation of information was still needed. This idea was supported by one member who

stated, " . . . one fear I have about the electronic movement, though I support it, is that it will cut people off who aren't in that world." There was still great variability in Internet access between public and University libraries, and a few of the attendees stressed that increased use of electronic formats was not as useful to them as having the printed materials available. One participant stressed that, at the very least, EPA must continue to notify the Government Printing Office of files available only through electronic means, because the GPO was the main contact for public and academic libraries for information.

Information Management Priorities

The librarians thought that EPA should keep in mind certain information management priorities as they look to the future.

- Repeatedly, the group remarked that *Access EPA* was an incomparable document for environmental research. They suggested EPA develop an updated print version and send it to every public library.
- The group also acknowledged the importance of making electronic access as useful as possible. While the group strongly appreciated the recent changes in the EPA Web site, they encouraged more work for accessibility and information retrieval.
- Lastly, participants related concerns that EPA was not adequately prepared to deal with electronic information. In particular, the group focussed on practices surrounding archiving information.

Archiving of historical data was a great concern to some participants as information access and storage moves from paper to electronic. For example, attendees stressed the importance of referencing historical data when investigating the current quality of a river. Participants agreed that no mechanism was developed by the government for archiving all its electronic information, and wondered how EPA was addressing that issue. With regard to all historic data and archiving, one speaker pleaded, "Just don't let it get lost."

There was strong agreement that the EPA Web site had been improved enormously with regard to presentation, navigation, and load-time. The listserves EPA developed for environmental information were a great help in exchanging information, and EPA's on-line publications were used frequently. Participants suggested that EPA could improve the site by allowing access to its search engine on every page.

There was some disagreement as to whether or not it was appropriate to have links from EPA's Web site to potentially partisan Web sites that could provide some context to and/or commentary on EPA data. One attendee thought that it might be helpful if EPA tried to resolve differing opinions on the interpretation of data and information to help the user draw a conclusion; another strongly believed that EPA's role was to simply provide the most objective, unbiased information. He noted, "EPA can't be all things to all people," and suggested that EPA simply follow its mission to provide the information and let the user deal with its interpretation. This was clearly a controversial topic, and although the majority of participants felt that EPA should refrain from linking to any of these environmental organizations, no consensus was reached.

Customer Information Process/Information Attributes

EPA adopted a framework to compile and categorize meeting commentary. This framework included an assessment of the Customer Information Process (CIP) and the Information Attributes (IA) important to EPA stakeholders. The CIP has four basic elements: Identification (establishing the existence and location of information), Acquisition (obtaining the information in an appropriate format), Management (adapting, translating, integrating, or combining the information to the customer's unique purpose), and Use (applying, interpreting, or assimilating the information in a value-added manner). Second, the meetings have been assessed according to Information Attributes. Topical attributes for the IA analysis included: Media (e.g., air, water); Industry (sector), Geography (e.g., site specific, local, regional); Legislation/Regulation; Time Dimension (e.g., update schedule); Demographics; Accuracy/Reliability; and Other Topics such as health concerns.

This section highlights the CIP and IA priorities for the Charlottesville, Virginia librarians meeting.

As a whole, the Customer Information Process was a higher priority for the group than Information Attributes. Integration and use of information were the strongest elements of discussion throughout the meeting. As noted above, it often was stressed that not only should EPA provide a glossary of terms, but they should provide a relevant context that will explain to the lay person what the information really means to them. "People coming into the public library want a conclusion. They want to know [whether] it is harmful. They want the bottom line." Participants also noted that, although what typically was needed was an analysis of the information, how the data ultimately were used really depended on the individual. Information, therefore, needed to be available in all stages and at varying levels of analysis, from preliminary data to final conclusions.

Participants agreed that much of the time they were not clear where to go for certain information, and they often had trouble identifying the office responsible for particular data or datasets. One participant stated, "At one time . . . trying to find out who on earth issued or may have issued a particular dataset . . . was just a nightmare. That's still a problem today with historical publications that go back."

Members were also concerned with acquisition of data in formats that would be useful to not only the public citizen, but also to the librarians. As noted above, because of varying levels of Internet access across libraries, there was strong consensus that there needed to be a combination of paper and electronic access. Opinions on whether or not electronic or paper media should be used also depended on the size of the reports, as well as the type of information (text documents saved as image files, which can be difficult to download, versus spreadsheets containing data that might be more useful to have in electronic format). There was strong agreement that EPA should provide abstracts or summaries of the information or data contained in electronic files, as well as the size of the files, so that users could make more informed decisions about downloading and printing large documents.

Participants were less focussed on Information Attributes, but briefly touched on Geographic Information Systems (GIS) as a useful tool for displaying information graphically and spatially.

With regard to the reliability or balance in the levels of information they received, the group agreed that users at the community level required a higher level of explanation than those in colleges and universities, who were often trying to draw their own conclusions from raw data. One participant explained that the feeling of accuracy or reliability was often dependent upon how the user perceived the production of the data, and EPA lent a certain credence to the reliability of the data. Generally, at the community level, the feeling was, "This came from the U.S. Environmental Protection Agency. It's got to be accurate."

EPA/Region III

Few members of the group had contact with EPA libraries. One speaker had called the library in Region III for information about Philadelphia, and noted that if you were looking for "fugitive documents that you know came out of that region," you started with the regional library. He also stated that usefulness and helpfulness varied from library to library, but that his recollection was that generally the regional libraries were very supportive. One participant questioned whether or not EPA was moving in the direction of disseminating their information through the states, rather than through their regional libraries. He was worried that if this happened, EPA would lose the Federal layer of librarians and technicians who "actually know what the heck they're doing."

Participants

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Jefferson Madison Regional Library

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Jefferson-Madison Regional Library

Rochelle Garwood
Thomas Jefferson Planning District Commission

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Environmental Education Center

Phil Hearne
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Lindsay Ideson
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Walter Newsome
UVA Library Government Information

Mary Plum
Jefferson-Madison Regional Library

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Denise Stephens
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EPA Observers

Diane McCreary

Region III Public Meeting 2 — Media Issues Pittsburgh, Pennsylvania March 4, 1999

Background

In October 1998, the EPA Region III Public Sector Needs Identification Team launched an assessment of customer needs and preferences for environmental information. This assessment involved a series of five facilitated public meetings conducted in cooperation with the EPA Region III office. Each meeting investigated a different stakeholder group, its current information gathering methods, its information needs, special issues for the stakeholder group, and investigation of the Customer Information Process (CIP) and Information Attribute (IA) priorities for the group.

The CIP and IA analysis tools were developed in 1997 for an EPA customer study conducted by the Center for Environmental Information and Statistics (CEIS) and the Environmental Monitoring for Public Access and Community Tracking (EMPACT) Program. This study sought to characterize customer needs for environmental and health-related information, preferences for accessing information, and interest in having more time-relevant monitoring and reporting capabilities. The CIP/IA framework is described in more detail below.

Summary Statement

The public meeting in Pittsburgh, Pennsylvania was attended by media representatives from print media, television, and radio stations, and included one representative from the Air and Waste Management Association Publications Department. For this group, information was a requirement to support production of news stories and development of newspaper articles. Access to individuals qualified to speak or provide information on various environmental topics was a critical requirement of their work. The group stated that EPA needed to facilitate the flow of information through development of a media and information resource guide. The group concurred that EPA must deliver information in a timely fashion, to the appropriate media contacts, and in a form that was understandable to the lay person.

Wish List

The group was asked to suggest ways in which EPA could better serve their information needs. The group suggested:

- Development of a regularly updated Media Guide with contact names, phone numbers, and addresses;
- Timely release of regular press advisories forwarded to the right people within a media organization;
- Jargon-free information releases using measures, comparisons, and concepts that the lay person can understand;
- Regular briefings or conference calls to notify the press concerning ongoing issues, problems, and upcoming events;

- Establishment of an EPA field office in Pittsburgh with a local contact for better accessibility;
- Stories that show positive results and help the public understand how EPA actions have relevance in their lives.

Information Experience

Members of the group made it clear that their information needs revolved around the development of stories, and that contacts were needed to facilitate the identification of quotable expert sources. As one participant stated, " . . . we are looking for the talking head or a sound bite that can address the local issue." In addition, participants explained that information used to develop stories needed to be timely, or quickly obtainable and understandable. On the issue of understandability, one participant stated, " . . . there is a problem where a reporter has to become a decoder, it is easier when the EPA and the reporter are on the same level . . . " The group said that understandability was enhanced by the inclusion of illustrations and measures of environmental impact that the lay person could understand. One T.V. producer said, "we need pictures," to help with a story.

When asked how they decided who to contact when a story broke, it was clear that in some cases they had an idea of where to go, while in other cases, where there was no concrete contact, they called every agency that could have been involved. One participant stated, in reference to the latter case, "We fire a shotgun and we call them all. . . . Then we wait to see, given our deadline, who's going to give us what we need within the parameters of how quickly we need it."

It was clear that the entire group felt contacts were vital to the work they did. As one participant put it, "we are not just looking for the information . . . we want [people] who we can put on TV, other contacts, referrals . . . " Often, the story was examined from several viewpoints, so experts from various sides of an argument were needed.

The group agreed that the public's understanding of environmental issues has grown. One participant stated, "I think there is a growing awareness of environmental issues in general. The public is coming to the realization that this is important." One participant said, "That grass roots level is much more educated than ever before . . . now you've got doctors and university professors at the forefront of some of these groups and movements."

Problems with EPA Information

There was broad agreement that the Agency needed to address its inability to explain things in a manner was readily understood by the media. As one participant stated, "If you are pitching a story, we need to know up front what is the impact, why is this important to our audience, why we should care, and if it is written in agency-ese . . . it goes in the stack to be looked at later." Another added, ". . . if we don't get [understand] it, the term broadcasting means we are casting that out to the broad masses, who don't stand a chance, then, of grasping the point you are trying to convey . . . " Group members strongly agreed on the need for EPA to prepare and present information in a manner that is broadcast worthy, both in language choice and presentation (including visuals), and easily passed along to the public. As one participant said, "we need pictures" and, "it will get extra bonus points if it is visual."

When asked how they would like to receive information from EPA, there was general agreement that faxes were better than E-mail from the standpoint of speed, but that it was important that a fax be sent to the right person. One participant said, "We are not E-mail savvy. . . . at the stations we rely on good old AP and the fax machine, and also PR news wire." Another said that information needed to come "by fax, with someone's name on it in the news room." In addition, the group members agreed that it would be great to have "a heads-up phone call letting you know a significant fax is coming--a big story."

Participants were surprised by the number of databases and hotlines that the Agency maintained. One member responded, "that is another reason for a media guide. We didn't know there were so many of these databases and Web pages." When asked the degree to which they used EPA Web sites, databases, and hotlines, answers ranged from "not at all" to "marginally" to "major use."

Another attendee raised the point that sometimes they felt sure that EPA had the information they needed in the databases, but they didn't know what search strategy to employ to get the information in a timely fashion. That participant felt that "the search engine on their Web site could be more defined." After attempting a fruitless Web search, one reporter said she wound up using five year-old ozone non-attainment data in a story because should could not find current data in time to meet her deadline.

Because contacts are such an integral part of the news business, the group called for EPA to develop a media guide that would include additional EPA resource information. When asked what the guide should include, individuals responded with statements such as, "where to go, what databases there are, what the Web site is and who to call about it" and " . . . a media guide of who the contacts, sources, and various issues are." One participant added, "and hopefully those would be sources that have past clearance, that are quotable, that we don't have to set up an interview . . . which gives us a little more flexibility in meeting our deadlines." Another said, "[With] DEP . . . we have come to almost expect...the immediate response . . . and clearly that offers an advantage for them over the EPA."

Special Areas

The information needs of this group were centered on requirements to effectively develop and present environmental stories. Emphasis was placed upon obtaining information from EPA in a timely fashion. The group believed that EPA needed to do a better job of communicating the significance of a given issue by communicating with the media using jargon-free terms and comprehensible measures. Participants agreed that stories needed to be supported by graphics and quotable expert sources to support media work.

As a whole, this group relied heavily on personal networking and contacts to do their jobs. The group agreed that EPA could help greatly by producing a media guide that listed the names and phone numbers of people within the Agency that could support them directly with information requests, and by helping them identify quotable local experts. The group also felt that access to EPA personnel should be enhanced by having contacts available during weekend and evening hours, because "news happens all the time."

Media Guide

The media group repeatedly remarked on the utility of a formal media guide from EPA. This guide should incorporate :

- Information resources available at EPA;
- Mission statements;
- Organization and cross reference by office, region, and area of concern;
- Clarification on local, state, regional and Federal jurisdiction; and
- Information on specific data sources such as databases, hotlines, and Web pages.

The group thought that a media guide would streamline the process of getting information, whether for an everyday environmental story or for reporting on an emergency.

Customer Information Process/Information Attributes

EPA adopted a framework to compile and categorize meeting commentary. This framework included an assessment of the Customer Information Process (CIP) and the Information Attributes (IA) important to EPA stakeholders. The CIP has four basic elements: Identification (establishing the existence and location of information), Acquisition (obtaining the information in an appropriate format), Management (adapting, translating, integrating, or combining the information to the customer's unique purpose), and Use (applying, interpreting, or assimilating the information in a value-added manner). Second, the meetings have been assessed according to Information Attributes. Topical attributes for the IA analysis included: Media (e.g., air, water); Industry (sector), Geography (e.g., site specific, local, regional); Legislation/Regulation; Time Dimension (e.g., update schedule); Demographics; Accuracy/Reliability; and Other Topics such as health concerns.

This section highlights the CIP and IA priorities for Pittsburgh, Pennsylvania media interests meeting.

In terms of the Customer Information Process, the group focussed on issues related to identification and acquisition. The group repeatedly mentioned its inability to identify and contact an appropriate person at EPA in a timely manner. Members found EPA's structure difficult when searching for a contact. Participants commented, "there are too many layers" and "the point person needs to know who to send you to." Another added, "the problem is the media sources are capable, but if they have to refer to other sources, it creates a layer, it would be better if [we] could go directly to people who knew, that we're told....are free to talk about their area of expertise." The media guide was proposed as part of a solution to this issue.

The group discussed information attributes pertaining to media, geography, regulation, time dimension, and reliability. Emphasis was not placed on any particular media, although clearly a broad spectrum was being considered (air, water, toxics, and hazardous waste cleanup). From the standpoint of geography, these news organizations were largely focussed on information with a local or regional context. Regulation was discussed, particularly with regard to its effect on employment, economy, and the environment.

The importance of information timeliness was a major topic of discussion, and it was clear that EPA must work harder to get information to the media in a much more timely fashion than it currently does. EPA could also affect timeliness by working to allow the media to interact with the Agency in a more expedient, directly accessible, and "user friendly" manner than it currently does. The group expressed a desire to be able to access EPA during evening and weekend hours.

The media often took expert opinion at face value, and one participant commented reliability was not a concern, "I never thought about it until you brought it up. I may question the reason for it . . . the standard. I go to other experts to question their standards, or whether it is necessary to dig up a leaking tank, but I don't question what they [EPA] tell me...I deem their information very reliable." The group noted that the media makes an effort to tell all sides of a given story, and highlights conflicting information as it comes up. But, ultimately, the public had to decide whose information is reliable.

EPA/Region III

The group as a whole had significant interaction with EPA Region III personnel. Members agreed that Region III could best help them by providing a regularly updated media guide with the contacts necessary to develop news pieces given their time restrictions; and providing some means of contact after hours and weekends. The group also concurred that EPA press releases would be much more useful if they were released before noon each day. One member further suggested EPA give regular press conferences or host regular conference calls to keep the media current on environmental issues and stories.

Participants

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Beaver County Times

Patricia K. DiVincenzo
WPXI - TV

Lynne Glover
Pittsburgh Tribune - Review

Frank Gottlieb
KQV

Don Hopey
PGH Post Gazette

Steve Joyce
KDKA

Todd E. Zahniser
Air and Waste Management Association

EPA Observers

Pat Boyle
Judy Braunston
Ray George
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Region III Public Meeting 3 — Local Environmental Groups Salisbury, Maryland March 11, 1999

Background

In October 1998, the EPA Region III Public Sector Needs Identification Team launched an assessment of customer needs and preferences for environmental information. This assessment involved a series of five facilitated public meetings conducted in cooperation with the EPA Region III office. Each meeting investigated a different stakeholder group, its current information gathering methods, its information needs, special issues for the stakeholder group, and investigation of the Customer Information Process (CIP) and Information Attribute (IA) priorities for the group.

The CIP and IA analysis tools were developed in 1997 for an EPA customer study conducted by the Center for Environmental Information and Statistics (CEIS) and the Environmental Monitoring for Public Access and Community Tracking (EMPACT) Program. This study sought to characterize customer needs for environmental and health-related information, preferences for accessing information, and interest in having more time-relevant monitoring and reporting capabilities. The CIP/IA framework is described in more detail below.

Summary Statement

The public meeting in Salisbury, Maryland was attended by three representatives of local rural environmental interest groups. This group focussed on issues pertaining to water quality and wetland conservation around the Chesapeake Bay, as well as coastal zone management issues in the Mid-Atlantic Region. The information needs of this group also focussed on regulations and environmental impact data. There was general agreement among participants concerning these information needs, provision, and uses. Two of the three individuals did not use the Internet or E-mail, indicating that an information "disadvantage" exists for some environmental groups. This group wanted information from EPA that would help them understand EPA's mission, what information the Agency had available, and how to obtain that information.

Wish List

The group was asked to describe how EPA could be most helpful with regard to their information needs. Members focussed on ways to identify and acquire EPA information through better information management, reference development, and enhancement of personal network. The group said that:

- EPA should provide detailed and specific information on environmental problems (what they are, their locations, and history). Data should be cited, and the implications of environmental impacts should be clearly described.

- Environmental information should be incorporated into planning documents. For example, local TV news programs should provide information on existing and emerging environmental issues.
- To make information more accessible, a printed directory should be developed that contains names, phone numbers, and E-mail addresses of individuals within the Agency. It should identify Agency responsibilities, and cross-reference individuals with areas of authority and jurisdiction.
- A printed directory of publications should be made available.
- Information obtained through contacts made at conferences and workshops was extremely valuable, as were environmental publication lists.
- Public education should be a key concern of the Agency, and field trips would be an important component of a sound educational program.

Information Experience

The group focussed on emerging and existing regulations affecting land use and conservation, as well as environmental impact data. Participants stated that they relied on information supplied by experts from other environmental organizations and universities, and emphasized the importance of contacts, particularly those made through conferences and workshops, as critical to meeting information needs. Two of the three participants had no experience with the Internet, suggesting that small, locally-oriented environmental organizations may sometimes be at a disadvantage from the standpoint of information access. These participants relied more on traditional sources to obtain information, including self-maintained libraries and phone calls to various personal contacts. "We do things the old fashioned way, we type it, then mail it . . . and make phone calls." Another participant used electronic resources to some degree, although she focussed more on E-mail than Internet searches. She remarked that time involvement was a barrier to Internet use. One participant used the county library, and bought the library's used books to supplement her own collection, while another stated that small town libraries were of no value.

As a whole, the group reported that they depended on highly regarded experts for credible information. One participant remarked, "we really rely on national groups." There was also an admission that scientific opinions that supported their side of an argument were easier to believe. Whenever possible, they made an effort to verify scientific findings with their own observations. Familiarity with an organization, and the individuals within it, also tended to enhance the perception of information credibility, as did data that were referenced. The importance of timeliness varied by issue. When testimony was involved, site visits were often performed beforehand.

Participants felt that education was the key to solving environmental problems. They suggested that regular television spots on the local news would be a useful way information that would to help institute change to the public.

Participants also said that EPA needed to pressure local governments regarding environmental protection, and that EPA could provide those governments with maps and other information so that local governments could review proposed planning with more scrutiny. One participant said. "[EPA] needs to enforce the law, that is the bottom line."

Problems with EPA Information

Participants said that they had a few contacts at EPA, but in general, they did not have a good grasp of what the responsibilities of EPA National and Regional offices were, or what information was available. The group had mixed results when approaching EPA for information. Members commented that a major barrier was not knowing who to contact. Overall, participants did not have much success using EPA products, but would like to use them. One participant said, "we need to have a 800 number, a directory, or some kind of information database that tells us what they have that we can use." Participants also agreed that a list of publicly available EPA documents would be helpful.

The group suggested the development of a printed directory. Such a directory should be hierarchically structured, and include names, phone numbers, and E-mail addresses. That directory should also cross-reference people with responsibilities, indicating who to go to for what. The document would need to clearly specify what the responsibilities were for Region III versus those of National Headquarters, and where to go for further information pertaining to issues beyond EPA's purview. For an example, one participant said, "If you had a fish kill, or a major chemical spill, who would you call?" Participants thought that an 800 number would be particularly helpful, and mentioned that the Maryland Department of Environment's 800 number was useful in the past. The 800 numbers were particularly important to small environmental organizations for financial reasons. The one Internet user in the group did not use the EPA listserve because she was concerned that she would be inundated with information. Another participant said that Region III should make a newsletter available.

The group felt that it was important for EPA to work in partnership with states. EPA could, for example, ensure that recommended warnings on pesticides are posted on products.

Special Areas

The discussion clearly indicated that some local environmental groups did not have access to electronically available information and data sources through the Internet. One participant indicated that her organization was funded out of her own pocket, and that keeping overhead costs down was a serious concern. She said she relied on more traditional sources, "doing things the old fashioned way," such as printed documents or contacts, for her information. The EPA cannot rely on the Internet and other electronic information sources to reach these groups.

Participants thought that partnerships between local, rural environmental groups had a real and strategic value in their efforts to leverage resources for public

Constraints on Small, Local Organizations The group supported a number of initiatives and approaches to EPA's information and support strategy. These strategies reveal a few constraints that especially effect these small organizations.

- *Low-tech:* these organizations do not have the overhead to provide for substantial electronic access, and do not have Internet access through local sources.
- *Time:* often understaffed, the group was wary of universal information providers, such as listserves which they found difficult to manage.
- *Structure and money*: these groups desired support from EPA, in order to take advantage of opportunities that already exist to partner with larger environmental groups.

education efforts. Attendees indicated that they would like to see EPA facilitate partnerships among local organizations and also with larger organizations with more resources. For example, one participant remarked that he relied on regular outings with a large, national environmental organization to keep abreast of local environmental issues and conditions. He summarized, "checking information through field trips is good." The group thought that EPA could partner with large, national organizations and small, local organizations to sponsor members of the smaller organizations to participate in meetings and field trips.

As a whole, the group believed that the Agency should continue to support environmental education efforts within the public school system. In addition, they commented that the EPA should educate the public through all means. As one member stated, "Anything would help."

Customer Information Process/Information Attributes

EPA adopted a framework to compile and categorize meeting commentary. This framework included an assessment of the Customer Information Process (CIP) and the Information Attributes (IA) important to EPA stakeholders. The CIP has four basic elements: Identification (establishing the existence and location of information), Acquisition (obtaining the information in an appropriate format), Management (adapting, translating, integrating, or combining the information to the customer's unique purpose), and Use (applying, interpreting, or assimilating the information in a value-added manner). Second, the meetings have been assessed according to Information Attributes. Topical attributes for the IA analysis included: Media (e.g., air, water); Industry (sector), Geography (e.g., site specific, local, regional); Legislation/Regulation; Time Dimension (e.g., update schedule); Demographics; Accuracy/Reliability; and Other Topics such as health concerns

In terms of the Customer Information Process, the group focussed on issues related to identification and acquisition. There was significant discussion regarding the identification of EPA environmental information. Specifically, group members expressed a sense of confusion regarding what EPA did and didn't oversee, and therefore, what information EPA had available to the public. They found that conferences and other personal contacts were a key mechanism for locating people and information within EPA.

The group agreed that data acquisition was hampered by the inability of participants to first identify what EPA had available. Most of the success acquiring information occurred when contacts were used. For example, one participant said that she received information from EPA through a University of Maryland Eastern Shore educators meeting and through the Coastal Bay Program. That participant also stated that she generally didn't know what EPA had available, or how to access it. Another participant said that they had success using E-mail to obtain environmental education handouts for use by children.

The group discussed information attributes pertaining to media (water and wetlands), geography, and timeliness. The group's media priorities were wetlands, coastal areas and water quality, and air pollution impacts on wetlands, which were the primary issues of concern where these individuals lived and worked. There was a moderate amount of discussion regarding geography; most focus was given to the idea that EPA could provide support to local governments to ensure that non-tidal wetlands were better preserved. Lastly, the group agreed that the importance of timeliness depended on the issue. In general, timeliness was found most important in those

circumstances where testimony was involved, and those instances when current information, generally obtained from field visits prior to testimony, was needed.

EPA/Region III

Group members had some interaction with EPA Region III personnel, primarily those that worked on wetland and pesticides issues. They established these contacts through intermediaries in other organizations or through having met EPA personnel at various conferences, public meetings, and workshops. In general, contact with Region III personnel was minimal. Participants felt that Region III should have a newsletter and a directory to identify contacts for information on various subjects or for emergency situations. The group said that a publications list would assist them in understanding what information EPA had available. Participants suggested that EPA Region III form partnerships with environmental organizations to support environmental education, not only for schools and students, but also for members of smaller environmental organizations to participate in meetings, field trips and other events that provide support and education.

Participants

Ilia Fehrer
Worcester Environmental Trust

Joseph Fehrer
The Nature Conservancy

Phyllis Koenings
Assateague Coastal Trust

EPA Observers

Dave Arnold
Mike Burke
Joe Kunz

Region III Public Meeting 4 — Small Business Interests York, Pennsylvania March 16, 1999

Background

In October 1998, the EPA Region III Public Sector Needs Identification Team launched an assessment of customer needs and preferences for environmental information. This assessment involved a series of five facilitated public meetings conducted in cooperation with the EPA Region III office. Each meeting investigated a different stakeholder group, its current information gathering methods, its information needs, special issues for the stakeholder group, and investigation of the Customer Information Process (CIP) and Information Attribute (IA) priorities for the group.

The CIP and IA analysis tools were developed in 1997 for an EPA customer study conducted by the Center for Environmental Information and Statistics (CEIS) and the Environmental Monitoring for Public Access and Community Tracking (EMPACT) Program. This study sought to characterize customer needs for environmental and health-related information, preferences for accessing information, and interest in having more time-relevant monitoring and reporting capabilities. The CIP/IA framework is described in more detail below.

Summary Statement

The public meeting in York, Pennsylvania, brought together representatives of various small and medium-sized businesses including dry cleaners, auto repair shops, electroplaters, and industrial machinery sales. The group repeatedly returned the discussion to regulatory issues, particularly the difficulties participants had in acquiring, interpreting, and complying with environmental regulations. Group members had extremely strong feelings about these regulatory issues, and found connections back to these topics when the subject matter changed. Participants stated that the laws and regulations they must abide by in their individual businesses were very difficult for business owners and employees to understand, and found it burdensome to keep on top of the requirements. The group agreed that, although communication between regulators and small businesses improved over the past few years, increased understanding and cooperation between these groups was required in order to reach a common goal of protecting the environment.

The participants admitted that they distrust EPA and other regulatory agencies; they suggested that EPA work more closely with trade associations to develop and distribute step-by-step regulatory guidelines to the industries, written in a way that is very accessible and easy to understand. There was also a high degree of concern among many members of the group that regulations were not uniformly enforced within and across industries, and that those businesses that tended to be more conscientious had trouble competing for business and were more highly scrutinized by enforcement officials than those businesses that were not so conscientious.

Wish List

The group's wish list consisted of a few items that were repeated often throughout the discussion. All members strongly agreed that EPA should improve the regulatory process by:

- Simplifying the regulations by using language that is easy for the average person running a business to understand;
- Working with trade associations to distribute industry-specific regulatory information and develop regulatory guidelines;
- Holding additional stakeholder group meetings with representation from more types of businesses that provide opportunities for regulators to meet with business owners and discuss regulatory concerns before regulations are written and issued; and
- Enforcing regulations uniformly within and across industries.

Information Experience

Group members strongly agreed that regulatory issues were their biggest concern, and focussed on the acquisition and interpretation of environmental regulations throughout the discussion. With regard to the acquisition of information, most members said they did not learn about new regulations through EPA or other government agency, but most often became aware of regulations from individuals who attempted to sell them pollution-abatement technology. One participant stated, "A lot of the stuff, if I don't overhear it, I don't even know it exists . . . There's no regular communication back and forth." Although the group members said that they receive large quantities of letters and other information from EPA in the mail, they agreed that they often did not have the time to sort through everything and try to cut through the difficult language to figure out what was pertinent to their businesses, so much of this information wasn't read.

Although participants said they did not trust that salespeople provided accurate information, most did not call EPA when they had a question about regulations or compliance because they also did not believe that EPA was credible. As a whole the group thought that it could be dangerous to contact EPA. One member related a story where someone called EPA for information on how to comply with a regulation, followed the instructions they were given, and were later cited for noncompliance. One member strongly captured the group's high level of distrust by revealing that he only dealt with EPA through his attorney due to attorney-client privilege because, "If you have a certain problem and you want to get EPA or DEP's thoughts on it . . . you're going to have an inspector standing at your front door the next day or the same day . . ."

Most participants belonged to trade associations, and found information from their associations the most trustworthy. One member stated the strong opinion of the entire group when he said, "There's no comparison. The credibility is definitely more on the side of the association, or someone other than government . . . The guys from the government, I don't want anything to do with." The group agreed that EPA should work closely with each of the trade associations to distribute and explain information to small business owners.

Few of the participants had experience with the EPA Web site. However, one member used the DEP and EPA Web sites, and said that although most of the regulatory information he looked for was available, the site was difficult to navigate and it took too much time to find. He pointed

out that the 'county notebooks' on the DEP site were very useful because, as a user, he found out quickly what was going on in each county, such as whether competitors were cited for noncompliance. He suggested, and others agreed, that EPA and DEP have a portion of their Web site that is industry-specific and lists new laws, regulations, and other important information relevant to each industry.

Problems with EPA Information

Participants focussed on the need for EPA to clarify and simplify information, as well as to develop a way to organize and reduce the quantity of information distributed through the mail.

Attendees agreed that receiving easy-to-understand, industry-specific summaries of the regulatory information from EPA through the trade associations would resolve the problems of "too much information" and the lack of organization. One participant summed it up by explaining, "What is happening is that there is too much information that is given to all of us or is put out there that we are supposed to act upon, and we don't have enough time to do that and run our businesses."

All participants strongly agreed that regulations were too complicated to understand, and made it very difficult for them to comply. One participant explained that many small businesses are operated by "simple working people" who couldn't afford to hire environmental engineers or consultants. Another stated, "You don't have time…to go back to college and get a chemical engineering degree or something to understand it." All members agreed that the information needed to be presented in clear, simple language that was understandable to the common citizen.

Attendees also strongly agreed that it was the government's job to clearly explain how businesses could comply with the regulations. One member stated, "Don't make us figure out how to do it because that's not our job." The group suggested simple, step-by-step guidelines. Time and money also played an important role in the discussion. One participant said of regulatory information, "Have it so that's it's easy to understand and comply with, and then we'll do it. . . . I'm not going to spend a week trying to figure it out, or pay someone $275 an hour to tell me how to do it." Another stated, "It all comes down to a cost, and if you have something that is simple to understand and implement, it's a lot less costly than something you have to dig through that you don't understand."

The group was able to think of one positive example of a regulation that was presented to them in a clear, understandable form. Many agreed that the emissions program was well spelled out in terms of what a business must do for emissions testing, and included training and recertification programs, which ensured that no one could perform emissions testing without proper training.

Special Areas

One participant addressed self-policing, voluntary compliance programs he joined such as the Strategic Goals Program for the metal finishing industry. He explained that he was on the Incentives Board, and believed the program had a lot of value. However, he was also somewhat skeptical, and felt that businesses did the work EPA should have done. He also commented that he felt very pressured into joining the program initially for fear that the "voluntary program" really wasn't. "The paper says it's voluntary, but why do they keep badgering and hounding you

to death on something that supposed to be voluntary?" He also noted that it took an exorbitant amount of time to fill out the paper work to join the program.

In response to this discussion, other members commented that many businesses were operating under the table and were not in compliance with state or Federal regulations, creating an unfair competitive advantage. Many felt that the companies that actually tried to comply were most closely scrutinized by regulatory agencies. Participants repeatedly asked for uniform enforcement of regulations across localities and across businesses.

Small Business Regulatory Challenge

The small business group found several challenges with regulatory information. Regardless of industry or sector, the group agreed that EPA should focus on four vital areas of information management.

- Keep information as simple as possible.
- Offer regulatory information organized by industry sector.
- Keep information accessible through a number of sources.
- Offer practical and binding solutions for regulatory responses.

The group returned to regulatory issues as related and key to almost every information topic offered for discussion.

Participants also expressed that they did not think that those who developed the regulations took into account concerns of small businesses or consider how the regulations affected the end user. One member suggested that the regulatory process be changed so the regulations primarily affected the initial suppliers of harmful products who actually knew the chemicals that were in the product, instead of those who simply wanted to buy a product needed in their business, e.g., parts cleaner. Others expressed concern that many of these regulations, due to the high cost of compliance, damaged small businesses, particularly in the manufacturing sector. Many of these businesses were forced to close or move out of the United States. One member stated, "They may be looking at clean air . . . and don't really think about how it affects your company and their people, their jobs. There's a lot of negative effects that they create by doing some of these regs which oftentimes are worse than what they tried to correct."

Customer Information Process/Information Attributes

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This section highlights the CIP and IA priorities for the York, Pennsylvania small business meeting.

Group members were concerned with all elements of the Customer Information Process, but primarily integration and use. As discussed earlier, participants were unable to easily identify and acquire pertinent regulations due to the large quantity of information they received from EPA and DEP that they were unable to sort through in a timely manner, as well as poor communication with EPA and other regulatory agencies. In addition, the regulations were not written in a way that was easily understandable, so compliance was very costly and difficult. Interpretation of the regulations was also been a problem due to the differences in laws between localities. Businesses were unable to tell clients how to properly handle and use their products because they did not understand how the regulations applied to every municipality. One participant stated, "It's now a matter of interpretation where someone applies it one way in one area and a different way in another."

With regard to attributes, participants were primarily concerned with regulatory information. Participants also questioned the credibility of information they received from EPA. They agreed strongly that they trusted their trade associations or any non-government entity more than EPA, and they preferred that regulatory information be distributed to them through their trade associations. Attendees also strongly agreed that categorizing and specifying the information by industry would reduce the quantity and complexity of information. Due to differences in interpretations of regulations across localities, the group also agreed that it was important to specify the actual distinctions among the applications of regulation in different geographic areas.

EPA/Region III

Many members of this group had negative experiences communicating with EPA. A few of the group members attempted to call Region III, but could not contact a person who understood their questions about the regulations. A couple of participants said they were given the "run around." One attendee suggested that EPA have industry-specific contacts to answer questions about the regulations. Others said they would love to have one sheet of paper from EPA that quickly summarizes the regulations they must abide by to run legitimate shops. One member supported this idea by stating, "Put it into plain sense so that people like us that are busy running their businesses every day can have short blurbs, whether it's on the Internet, on a fax-by-demand, give me what I need."

One member had a positive experience at a public meeting with EPA and members of dry cleaning associations, and felt that EPA understood the problems these businesses had with regulations and compliance. He agreed that EPA should be partnering with associations to help educate the industry and stated, "EPA needs to work with associations to compile regs in an understandable fashion. From my standpoint, that would be the key to success."

The participants ended the discussion on a high note, and admitted that EPA listened more to industry and softened its "storm trooper" attitude during the last few years. One member acknowledged that EPA was beginning to work more with industry in the form of stakeholder groups, where regulations were discussed before they were written and issued. With regard to his participation in this stakeholder group with EPA, he stated, " . . . the results we've seen from that have been very positive."

Participants

Barry Burkholder
Barry's Paint Shop

Dale I. Kaplan
Kaplan Drycleaners

Charles Rupp
Y-E-P Industries, Inc.

Quay F. Smith
A.D.F.

David R. Sollenberger
Electro-Platers of York, Inc.

J. Thomas Zech
ASP of PA (Auto Service DLR)

EPA Observers

Joe Kunz
Janet Viniski

Other Observers

Richard Seagrave Daly, SBA

Region III Public Meeting 5 — Environmental Educators Frederick, Maryland March 18, 1999

Background

In October 1998, the EPA Region III Public Sector Needs Identification Team launched an assessment of customer needs and preferences for environmental information. This assessment involved a series of five facilitated public meetings conducted in cooperation with the EPA Region III office. Each meeting investigated a different stakeholder group, its current information gathering methods, its information needs, special issues for the stakeholder group, and investigation of the Customer Information Process (CIP) and Information Attribute (IA) priorities for the group.

The CIP and IA analysis tools were developed in 1997 for an EPA customer study conducted by the Center for Environmental Information and Statistics (CEIS) and the Environmental Monitoring for Public Access and Community Tracking (EMPACT) Program. This study sought to characterize customer needs for environmental and health-related information, preferences for accessing information, and interest in having more time-relevant monitoring and reporting capabilities. The CIP/IA framework is described in more detail below.

Summary Statement

The public meeting in Frederick, Maryland brought together environmental science and biology teachers from elementary, middle, and high schools. As a whole, the group found it very difficult and time-consuming to find useful information on the Internet. None were successful using the EPA Web site to find data. And none were aware of the range of information services offered by EPA.

Much of the discussion focussed on the time and financial constraints faced by educators, and ways in which EPA could assist in breaking down these barriers. Suggestions included direct support such as educational and training programs, money, and laboratory materials. The group also agreed that they found articles published by the EPA useful for relating international and national environmental issues to the community level and student experiences. The group agreed that students at all grade levels who are studying the environment benefit most from hands-on experiences out-of-doors, but educators lack the time, money, and proper structure to organize such events. Members sought support to make outdoor experiences really meaningful to the students, by finding ways of sharing collected information.

Wish List

The group's wish list consisted of items that focussed on improving access to and awareness of EPA information and technical support, easier access to grants money and other support, and professional development. The group agreed that it would be most helpful if EPA were to provide the following:

- Periodic announcements of new information and offerings to teachers through telephone, traditional mail, and E-mail;
- Improved access to EPA experts and speakers through teacher training, regional workshops, and teacher and student internships;
- Graduate credit for certain activities;
- Financial assistance;
- Collaboration with businesses to recycle discarded equipment through donations to local schools;
- Improved, streamlined grant-writing processes that require less writing and follow-up time; and
- User-friendly Web site where environmental data and information are readily available.

Information Experience

The group agreed that the types of data they wanted to use for environmental lessons and projects in the classroom were very difficult to find. Participants searched for studies on environmental topics such as water quality, population growth, and point sources of pollution, and primarily looked for specific numerical and technical data to use for classroom projects, such as dissolved oxygen rates in different parts of the Chesapeake Bay.

Both participants and their students found the Internet time-consuming and frustrating to use and to find environmental data. In addition, members commented that sites were difficult to navigate, that recommended or hotlinked sites often turned out to be "dead leads" that were no longer available. One participant expressed the group's frustrations declaring, "My concern with the environmental sites is that most of them seem to be very general. The environmental data seems very superficial, and the EPA site is very confusing . . . you just follow dead leads and get lost within the site." Attendees pointed to a few sites that were useful, including Maryland's Department of Natural Resources, the World Bank, the Central Intelligence Agency, the Chesapeake Bay Trust, and a site called Access Excellence, created by educators for biology teaching and learning.

Internet availability among group participants varied. Newer schools tended to have Internet access in the classroom and computer labs with enough computers for all students. Some older schools had a limited number of computers labs or library access, but did not have Internet access in the classroom. Educators were wary of how easily Internet searches could lead to inappropriate sites and material. Generally, older students had more freedom in school to do supervised Internet searches, while in younger grades the Internet was used primarily by the teachers as a reference, and kids were sometimes given the opportunity to access specific sites. However, many participants agreed that many students of all ages used the Internet as a major resource at home.

One participant remarked that he was most successful finding information through a contact within a company or organization. He stated that without that contact person, collecting resources was "impossible." Other ways of getting information included attending seminars or workshops through trade associations such as the Maryland Association of Environmental and Outdoor Educators and the Maryland Association of Science Teachers.

Problems with EPA Information

Although many attendees visited EPA's Web site, none found it to be a good source of environmental information. Participants said they found the site to be very difficult to use, and one member agreed, "The EPA Web sites are very disorganized . . . and it is really hard to track anything down." In reference to the EPA Web site, another participant stated, "EPA seems to be much more focussed on legislation . . . or looking at programs and descriptions of programs, and not what they are finding out within the programs." He then questioned whether they could not find the data because the kind of data they needed was not available on EPA's site, or because the site was simply too complex to find the information.

In addition, members of the group were not familiar with the range of information services and formats offered by EPA. Some attendees used a few of EPA's printed pamphlets and brochures that discussed subjects such as emissions testing and risk assessment. One participant suggested that EPA send educators colorful documents or booklets that describe the types of information available from each of the databases, Web sites, and hotline numbers. Members agreed that colorful paper is important to them as educators, because of the "mountains" of white paper they regularly had to handle.

Special Areas

Throughout the discussion there was strong agreement that participants spent a great deal of their time searching for interesting information and projects to supplement their textbooks, and putting an environmental curriculum together involved a great deal of "scrambling." One member said, "You're constantly looking and grabbing and absorbing and thinking and hoping and praying and begging."

The group strongly agreed that environmental education ideally should be "hands-on" education, and outdoor experiences were beneficial. Many took students out to nearby water bodies to physically gather water samples for water quality testing. One participant noted, "Those are the kinds of things that kids remember . . . rather than just the book work and all that stuff." However, participants agreed that the data they gathered was not very meaningful on its own. Universally, the group thought that getting the data outside of the school and sharing it with students at other schools made it more meaningful.

One participant remarked that partnering with EPA would be a "wonderful gift." Another agreed, "If you gave us that structure and that guidance . . . that would be wonderful." As an example of a supportive structure in a partnership program, one attendee cited the GLOBE program sponsored by NASA. In the GLOBE program, schools are supplied with materials and trained on how to use them to gather weather and soil data.

Participants universally concurred that day and overnight field trips are very important to environmental education. One attendee described a wonderful outdoor program in Fairview, Maryland where students of all grade levels could do hands-on scientific testing. However, lack of funding prevented the educators from taking the students on outdoor trips as often as they liked. Many participants took advantage of resources offered by private environmental organizations. Because many groups were known to present biased information, all members agreed that they were careful to present the students with all sides of environmental issues, but they would not turn down educational opportunities. One member commented, "If there's money out there and it will help us with part of our programs, it's not like we're going to say no to it."

Structure and Support in Partnerships with Educators

Participants reported that the following types of assistance from EPA would help to provide an ideal structured outdoor environmental, educational program:

- Provide access to a test site;
- Standardized sampling equipment and standardized forms to record data;
- On-site experts to provide training and assistance;
- Data sharing and other programs to make results more meaningful;
- Follow-up support, including assistance with data compilation and distribution between schools, data standardization, and mentoring for older students; and
- Professional development opportunities for educators.

The group strongly desired support, through well structured partnerships, for success in activities outside the classroom.

Another participant explained that many private businesses and organizations offered grant opportunities, but they were very time consuming. "There's a tremendous amount of work that goes into just meeting all the requirements that a lot of teachers don't have, so they just don't do it." As a whole, the group thought that if the grant writing process could be streamlined, less follow-up time was required, and the money was paid out up front rather than piecemeal over the life of the grant, more educators would be able to take advantage of grants.

Customer Information Process/Information Attributes

EPA adopted a framework to compile and categorize meeting commentary. This framework included an assessment of the Customer Information Process (CIP) and the Information Attributes (IA) important to EPA stakeholders. The CIP has four basic elements: Identification (establishing the existence and location of information), Acquisition (obtaining the information in an appropriate format), Management (adapting, translating, integrating, or combining the information to the customer's unique purpose), and Use (applying, interpreting, or assimilating the information in a value-added manner). Second, the meetings have been assessed according to Information Attributes. Topical attributes for the IA analysis included: Media (e.g., air, water); Industry (sector), Geography (e.g., site specific, local, regional); Legislation/Regulation; Time Dimension (e.g., update schedule); Demographics; Accuracy/Reliability; and Other Topics such as health concerns.

This section highlights the CIP and IA priorities for the Frederick, Maryland environmental educators meeting.

The group's biggest concerns related to the Customer Information Process were focussed on identification and acquisition. Group members had trouble finding good sources of information that presented the types of specific numerical data they were seeking. In reference to the EPA Web site, one participant said, "They are not presenting it to us in any usable fashion." Another said, "Give me numbers. Don't give me summaries of information."

Participants also discussed the common difficulty of integrating and using the information they found into classroom lessons, particularly hand-on projects and labs. Many had trouble finding experiments that are age-appropriate. One high school educator said, "My biggest problem is finding hands-on experiments that work. They're either on that very high end of college level, or at the very elementary level, and for the high school kids there's got to be a balance there." A few participants complained that they often took the time to rewrite labs and experiments. All agreed that they would like an easy way to find appropriate labs that include good directions on how to obtain the materials and perform the experiments.

As discussed above, members had trouble using the information students gathered from outdoor experiments in a way that was meaningful. All agreed that some structure and guidance through an EPA-sponsored program across schools would add value to the work they did. One participant said of the water sampling, "If you could put it under an umbrella . . . where all the pieces fell together and everybody was doing it, I think there could be some meaningful work being done."

Attendees also touched on the importance of certain information attributes. Some members of the group, particularly those that taught the older students, attempted to relate their lessons to actual current conditions and were therefore very concerned with the timeliness of data. Text books that were used in the classroom are three to four years old, and much of the data on the Internet was not updated. One participant stated that some of the scientific journals had current information, but finding timely data was a "constant search."

Regarding the reliability of information on the Internet, educators tended to have greater trust in information if it was on a government-sponsored site. One participant said, "If it's an EPA site or a NOAA site or it's a USGS site, we'll consider that to be fairly valid data."

EPA/Region III

Participants agreed that they did not view EPA as an agency that involved itself in educational programs. One member stated of EPA, "I haven't found them to be that approachable. NASA . . . a part of their program has been to reach out to schools . . . But I haven't seen that kind of outreach from EPA. It seems like they're really tied up in their regulatory stuff and have not been school-friendly." Another stated, "My perception has always been that they're [EPA] fairly remote and not as easily accessible [as other sources]."

Many participants suggested ways that EPA could do a better job of distributing information to educators. Because of time constraints, it was very important to the group that EPA bring new information directly to them. One member said that her mailbox at work was the best way, and stressed that the information should be brightly colored to easily distinguish it from the piles of

white paper she received every day. To be sure that EPA reaches all pertinent teaching staff, other participants suggested that EPA coordinate with an environmental representative in each county, or attend the county supervisors' meetings that are held twice a year to discuss new offerings and distribute information. Another suggested EPA establish a listserve where educators could communicate with experts in various areas of responsibility.

Participants

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Brunswick High School

Karen King
Clarksburg Elementary School

Richard Knight
Rocky Hill Middle School

Jeff Garrison
New Market Middle School

Dale E. Peters
Urbana High School

Sean Stevenson
Cedar Grove Elementary

Lori Stiles
Brunswick High School

Mark Sunkel
Linganore High School

Rose Ulrich
Boonsboro High School

EPA Observers

Larry Brown
Diane McCreary

Appendix II
Information Inventory Review

At the end of each discussion group, participants were asked fill out a form that included questions about their needs for environmental information. Participants were asked what types of information they consider most important and how they would like to obtain this information. In addition, the questionnaire included questions about the participants' ages, education levels, and access to various information media such as the television, newspaper, and computer.

In response to a question asking participants to list the three types of information they consider most important, participants gave a very broad range of answers. The following is a list of the general categories that respondents chose as priority information for their own stakeholder group.

Media-Specific: Data and information characterized by its medium (water, air, ground).

Statistics/Trends: Sets of data, statistics, and trends.

Geographic Data: Data described by its location (local, state, national, global).

Accessibility/Metadata: The understanding of information and data by different levels of users (lay person, academic, engineer). This category also includes the physical process of getting data from EPA.

Standards/Regulations: Information related to any environmental standard and regulation. This may include more general areas, such as the ease of understanding regulations, uniform enforcement of regulations, and information on how to comply.

Education: Educational and outreach programs that target the general public and/or children.

Information Sources: Studies, publications, reports, Web sites, charts, maps, posters, etc. that provide environmental data and information.

Public Impact: Investigation/discovery of "newsworthy" issues that may have a short or long-term impact on public health or economic welfare, including emergency situations, locations of Superfund sites, etc.

Understanding EPA: EPA contact information, including program and individual staff responsibilities, phone numbers, e-mail addresses, etc. Also includes working together with EPA in stakeholder groups to create better communication and understanding of both EPA and stakeholder needs and concerns.

EPA Access: Physical access to EPA experts, assistance, teacher and student training, scientific testing equipment, grants, and other monetary resources.

Demographics: Population issues, including disease/outbreak control.

Librarians

Region III Public Meeting 1 brought together a group of public, university, and Federal agency librarians and other information service representatives. Because the CEIS/EMPACT study did not include librarians, this group offers a perspective that is new and unique to EPA. Not only does this group offer a sense of the types of information sought by the general public, but also identifies the special needs of those who organize, store, and archive EPA's information.

Participants indicate on the Information Inventory the three most important types of environmental information that EPA should be providing. This group places a priority on media specific information, statistics/trends, geographic data, and accessibility/metadata. Information needs of this group are heavily influenced by patrons of the different libraries and information services. In the academic libraries, visitors generally search for raw data and statistics to perform studies. In the public libraries, patrons are often search for answers to questions about situations that affect them more personally, making the availability of geographically-relevant information on air and water quality critically important. Participants deal with many different types of people, including members of academia, the sciences, and the general public. The librarians note the importance of information provided in a way that is accessible to people with different levels of understanding. In the Information Inventory, this translates into a priority for accessibility/metadata.

The Information Inventory asks participants to choose their three top choices for obtaining the information they consider "most important." The Internet is the most frequent priority and most participants indicate they have access to computers at home and at work. However, the inventories show that some are not able or choose not to use computers at work for Internet access or E-mail, and indicate that most are still very dependent on printed materials. Many members of the group agree that it is very important to have additional means of accessing information, such as printed materials and CD ROMs, particularly for long documents or documents containing a lot of graphics which can often be difficult, time-consuming, and sometimes costly to download or print. While many group members appreciate the Internet and would like to see more information on the Internet, all also agree that a mechanism needs to be created to archive data that is only published electronically.

The Information Inventory asks participants to indicate how often the information they consider "most important" should be updated. This group is more concerned with ability to regularly access information than the immediate timeliness of information, and is predominantly interested in receiving yearly and quarterly updates.

On average, the group rates how well EPA is currently providing the information they need at 5.2 on a scale from 1 to 10, with 1 being the worst and 10 being the best.

Media Interests

Region III Public Meeting 2 brought together a group of media representatives from print media, television, and radio stations. Because the CEIS/EMPACT study did not include media interests, this group offers to EPA a look at the types of information most commonly desired by the media to present to the general public, and the unique needs of the media in acquiring this information. Understanding and working to become more responsive to media needs puts EPA in a position to get better, more understandable information out to the public more quickly, and may allow the public to gain a more positive perspective on EPA activities through enhanced knowledge.

Participants of this group indicate on the Information Inventory the three most important types of environmental information that EPA should be providing. This group indicates that they are often in search of information on "newsworthy" issues, which typically have an impact on public health or economic welfare. Specific examples include locations of Superfund clean-up sites and environmental emergencies. In their discussion, some members of the group say they also like to report on stories with a positive spin. Placing a priority on standards/regulation and media-specific data, this group emphasizes the importance of having access to environmental trends up to the present time and environmental information that is very current to support stories.

The Information Inventory asks participants to choose their three top choices for obtaining the information they consider "most important." The group identifies Internet and Special Phone Number most often and equally as the most important way to get information. These choices support this group's unique need to access reliable, quotable information quickly for two distinct reasons. Participants say they must have easy, quick phone access to "talking heads" and a few reliable, consistent contacts at EPA Program Offices who can provide them with up-to-date, accurate information on stories and quotable comments. They require up-to-date numbers and statistics that they can get quickly to support news stories. The Internet can be a good source of up-to-date information for media staff who are faced with deadlines, especially when EPA employees are not available (evening or weekends). With regard to getting information from EPA on late breaking news or stories, many participants agree that they do not like to be called on the phone, but would prefer to receive concise, one-page faxes early and throughout the day. This idea was supported in the inventory, where several particpants wrote in their preference of getting faxed information, although it was not an option provided within the bounds of the Inventory.

The Information Inventory asks participants to indicate how to update the "most important" information. As presenters of late-breaking news to the public, this group wants information updated frequently, and indicates that they would like the majority of information updated weekly or as often as needed.

On average, the group rates how well EPA is currently providing the information they need at 6.8 on a scale from 1 to 10, where 1 is the worst and 10 is the best.

Local Environmental Groups

Region III Public Meeting 3 was attended by three representatives of local East Maryland shore environmental interest groups. The results of this group are skewed, as revealed through the results of the Inventory of Information Needs questionnaire. While all three of the group members are highly educated, two are over the age of 70, and of these two neither has access to a computer at home or at work. This group illustrates how many of the smaller local environmental groups are "low-tech," and may not have the same levels of access to information as many of the large, well-known national groups.

Participants indicate on the Information Inventory the three most important types of environmental information that EPA should be providing. Group members need the names of EPA contacts they can turn to for information on particular issues or program areas. They are also interested in learning the particular responsibilities under EPA programs versus other agencies that also have responsibilities in similar areas, such as fisheries, so they know which agency to call for information on specific issues. Participants also agree that more and better public education programs are necessary to make the public more aware of and interested in environmental issues, and, by garnering public support, assist them in their own missions of protecting the natural environment.

The Information Inventory asks participants to choose their three top choices for obtaining the information they consider "most important." The group identifies printed material as a priority most often, and this preference is supported throughout the discussion. Two of the group members do not use computers at work or at home and rely primarily on printed materials. Despite the preference for printed materials by these two group members, the growing importance and dependence of others on the Internet is still recognized by the group as a whole, and is highlighted as the second best way to obtain environmental information. This group also indicates that they are highly dependent on their self-developed network of knowledgeable phone contacts, and, as discussed above, would like to obtain a phone directory of good contacts at EPA who they can depend on for information about particular issues. In addition, group members asked for an 800 number to call at EPA for directory assistance which would save money, since non-paid volunteers are often responsible for long distance phone bills.

The Information Inventory asks participants to indicate how often the information they consider "most important" should be updated. This group relies heavily on printed books and materials for information, they are less concerned with timeliness, and only require yearly and quarterly updates.

On average, the group rates how well EPA is currently providing the information they need at 3.7 on a scale from 1 to 10, where 1 is the worst and 10 is the best.

Small Business Interests

Region III Public Meeting 4 was attended by representatives of small and medium-sized businesses. The results of the Inventory of Information Needs questionnaire show that this group focusses its attention on regulatory issues, and particularly the difficulty in compliance requirements. Half the members of this group did not attend college and one did not complete high school. Many say that they rarely have the time or the resources to hire additional staff and consultants to assist them in the process of understanding regulations. This may indicate that many people running small businesses require a greater level of support to understand and comply with environmental regulations than is currently being offered by EPA.

Participants indicate on the Information Inventory the three most important types of environmental information that EPA should be providing. This group overwhelmingly replied that they require better information on environmental regulations on many levels. Responses include:

- Easy-to-understand regulations;
- Industry-specific regulations and guidance;
- Simple steps on how to comply;
- Proven compliance methods;
- Common practices and technologies that will help improve processes; and
- Training seminars on regulations.

These information needs, as well as improvements to the process of acquiring information and assistance, are repeated throughout the discussion. Some group members suggest industry-specific contacts they can call at EPA who understand the regulations and compliance information specific to industries such as auto repair, dry cleaning, and electroplating.

The Information Inventory asks participants to choose their three top choices for obtaining the information they consider "most important." The Internet was chosen most frequently. All participants have computer access at home and at work, and indicate high levels of usage. However, participants indicate in the discussion that they find the EPA Web site difficult to navigate, and suggest industry-specific pages that describe the relevant and new regulations. Participants also chose printed materials as a secondary preference. Their discussion indicates that they would like to receive printed materials and announcements about new regulations and guidance through their associations. Finally, participants say that special industry-specific phone numbers and contacts would also be useful.

The Information Inventory asks participants to indicate how often the information they consider "most important" should be updated. This group is predominantly concerned with acquiring and understanding regulatory information and updates and is less concerned about timeliness. They predominantly desire yearly and quarterly updates.

On average, the group rates how well EPA is currently providing the information they need at 2.8, on a scale from 1 to 10 where 1 is worst and 10 is best.

Environmental Educators

Region III Public Meeting 5 brought together science and biology teachers from elementary, middle, and high schools. This results of this group provide EPA with insight to the types of assistance and partnering opportunities educators believe will best help them to teach students the importance of environmental protection.

Participants indicate, on the Information Inventory, the three most important types of environmental information that EPA should be providing. Overall, group information needs are most often related to accessing EPA experts, training programs, and monetary resources. During the discussion, members of the group repeatedly expressed the need to work with EPA and other schools to develop an outdoor educational program, where EPA would provide access to a test site, sampling equipment, on-site training experts, and follow-up support. The Inventory and discussion indicate that group members would like EPA to facilitate the sharing of test results between schools, to make the results more meaningful to the students. Group participants also indicate a significant need for up-to-date, geographic, environmental data for use in lessons and for indoor lab projects. In particular, many participants say that they would like to use data to teach national environmental issues on a local level. Many members of this group also indicate that they rely heavily on the Internet to find data and information, as well as projects and labs, and would like EPA to provide direction on good Internet sources and Web sites that contain age-appropriate environmental activities for students.

The questionnaire also asked participants to choose their three top, "most important" ways to obtain environmental information. This group prefers to obtain most of their environmental information as printed material. During the discussion, group members highlight their preference of having EPA mail information, such as educational program opportunities and contact information, and request that the information be sent to their school addresses printed on brightly colored paper to distinguish it from the other mail they receive. Group members comment during the discussion on the usefulness of student handouts. In the open-ended comment section of the inventory, one member requests brochures of EPA focus issues and concerns. Group members also emphasize that they need printed materials with graphics, such as posters, that show data in charts and tables. Participants chose the Internet as the second best way to get environmental information, and suggest that EPA consider a special section on their Web site for educators providing useful activities and laboratories for the classroom for all age levels. The newspaper was also chosen as a top way to obtain information, cited during the discussion as a great way of learning about local and national environmental issues and concerns for use in daily lessons.

The Information Inventory asks participants to indicate how often the information they consider "most important" should be updated. This group, looking often for new projects and lessons for their students, requires quarterly and monthly updates.

On average, the group rates how well EPA is currently providing the information they need at 2.9, on a scale from 1 to 10, where 1 is worst and 10 is best.

Appendix III
Exit Inventory Results

Background

The following pages contain the post-group responses from the Region III, Public Sector Needs Identification Team public meetings. Each meeting ended with a request for participants to offer additional, written information about their information options, as well as a final opportunity to comment on EPA's information issues. For purposes of management the results were divided into two parts. The first part, Table A, includes all questions related to the three top information needs named by each respondent. The second part, Table B, includes all of the remaining topics (including an overall rating). Please refer to the attached copy of the inventory to understand the following explanation of the compilation process for both Table A and Table B.

The compilation is divided by meeting and date: 1) Frederick, Librarians; 2) Pittsburgh, Media; 3) Salisbury, Environmental Organizations; 4) York, Small Business; and 5) Frederick, Environmental Educators. This document reports all the results for Part A and then all the results for Part B.

Table A

Table A records inventory responses in columns from left to right. The first column, **No.**, reports a unique and distinct number for each respondent. The next column, **Media**, lists the types of information desired from EPA, with answers filled in by the respondent. Next, **How to Get**, reports all of the ways to get information circled by the respondent. Responses to this question are numbers identified in the legend below. **Best, 2nd Best, 3rd Best, Worst**, and **2nd Worst** report the rank given to the various information delivery mechanisms. The column labeled **Updated** reports how often the respondent would like to see each type of information re-assessed and reported. The **Media Information Rating** reports the individual ratings the respondent gave the specific need identified in the **Media** column. Finally, the **Comments** column offers any comments given on preferences for receipt of the specific **Media**.

Table B

Table B records inventory responses in columns from left to right. The first column, **No.**, reports a unique and distinct number for each inventory. The next column, **EPA Grade**, reports an overall rating for EPA information from worst to best on a scale of one to ten. **Age** reports the respondents age on their last birthday. Next, **Gender**, reports the gender of the respondent; see legend below. **Grade** reports the last year of school attended by the respondent; see legend. **Lang** reports the language spoken at home by respondent; see legend. **Race** refers to the ethnic background reported by respondent; see legend. **TV** and **Cable** report whether or not the respondent has a TV or cable access, and their yes/no responses; see legend. These two columns are followed by four questions regarding home computer use. Please see inventory for the exact questions. The column marked **Use** refers to the final question in that series: how often do you use a computer at home for E-mail or Internet? Responses to this question are numbers identified in the legend below. Next, the four questions regarding computer access are repeated in reference

to a computer at work or somewhere else outside of the home, followed by the same question on **Use**. Following the computer questions, **Newspaper** asks if the respondent read a newspaper on the previous day. Finally, **# in Home** reports the number of people living in the respondent's household.

Beneath Table B is a record of additional comments provided by respondents. The respondent inventory number is used to identify comments.

Legend

How to Get
1 - Radio
2 - Newspaper
3 - Internet
4 - Public Library
5 - Special Phone Number
6 - High School
7 - TV
8 - CD ROM
9 - Printed Material
10 - Museum or Science Center

Gender
F - Female
M - Male

Grade
8 - 8th Grade or Less
9 - 9th through 11th Grade
12 - 12th Grade
SC - Some College
FC - Finished College
GW - Graduate Work/Degree

Language
E - English
S - Spanish
O - Other

Race
AA - African American
H - Hispanic, Latino, Chicano
A - Asian
NA - Native American
W - White

Yes/No responses

Y - Yes
N - No
n/a - No Answer

Use

1 - Never
2 - Once a Year
3 - Once a Month
4 - Two or Three Times a Month
5 - Once a Week
6 - Several Times a Week
7 - Once a Day
8 - Several Times Each Day

Table A -- Librarians, Charlottesville, VA -- February 23, 1999

No.	Media	How to Get	Best	2nd Best	3rd Best	Worst	2nd Worst	Updated	Media Information Rating	Comments
1	Air &Water Quality	1, 2, 3, 4, 5, 9	4	3	5	7	6	Yearly	2	Make information as local as possible
2	Pollution/ Contaminant Standards	3, 4						Yearly	8	
2	Waste Disposal	1, 2, 3, 4, 5						Quarterly	2	
2	Environmental Quality Reports	3, 4, 6						As often as possible	7	
3	Different Levels of Users	3, 9	3	9				Daily	6	
3	Education Programs	3	3							
3	Centralized Clearinghouse for Data	3	3							
4	Pesticide Data	3, 8, 9, 10	9	3	8	2	7	Quarterly	6	More geographic detail
4	Water Quality	3, 8, 9, 10	3	8	10	2	7	Quarterly	5	More geographic detail
4	Toxic Emissions	3, 8, 9, 10	3	8	10	2	7	Yearly	8	More geographic detail
5	Environmental Impact Statements	3, 8, 9, 10	3	9		6	1			
5	Statistics	2, 3, 8, 10	3	8		6	1			
5	Datasets	3, 8, 10	3	8		6	1			
6	Air	1, 2, 3, 4, 5, 7, 9	4	3	7	10	6	Quarterly	5	

Table A -- Librarians, Charlottesville, VA -- February 23, 1999

6	Water	1, 2, 3, 4, 5, 7, 9	7	3	4	10	6	Quarterly	5	
6	Ground	1, 2, 3, 4, 5, 7, 9	3	7	2	10	5	Quarterly	5	
7	Local Conditions	2, 3, 4, 9, 10	4	3	9			Yearly		Practical, in lay terms
7	Publications on Environmental Topics	4, 6, 10	4	6	10					
7	Information for Children	2, 3, 4, 10								
8	General Information	all	3	6	7			Yearly	3	State or County
8	Medium Specific Regional Data	3, 8, 9	3	9	8			Monthly	2	Watershed
8	Information in Context	3, 8, 9	3	9	8			Quarterly	3	Need region-specific watershed information
9	Goals	1, 2, 3, 6, 7, 8, 9, 10	6	2	1	5	4	Yearly	3	
9	Data	all	9	3	5			As needed	7	Local
9	Role	1, 2, 3, 6, 7, 8, 9, 10	6	7	1	4	5	Yearly	3	
10	Air Quality	3, 9						Quarterly		
10	Water Quality	3, 9						Quarterly		
10	Auto Testing	1, 2, 3, 4, 8, 9						Yearly		

Table A -- Media Interests, Pittsburgh, PA -- March 4, 1999

No.	Media	How to Get	Best	2nd Best	3rd Best	Worst	2nd Worst	Updated	Media Information Rating	Comments
11	Scientific Studies	3, 9	9	3	4	n/a	n/a	As needed	6	
11	Investigation Reports	3, 9	9	3	4	n/a	n/a	As needed	6	
11	Activity Reports	3, 9	9	3	4	n/a	n/a	Weekly	8	
12	Public Impact Information	n/a	Fax	5	E-mail	mail	n/a	As needed	7	
12	Problem Discovery and Remedy	n/a	Fax	5	E-mail	mail	n/a	As needed	8	
12	Trends and New Regulations	n/a	Fax	5	E-mail	mail	n/a	As needed	8	
13	Clean-up Sites	5,3	5	3	n/a	10	4	Weekly	3	
13	Contacts	3	3	n/a	n/a	n/a	n/a	Weekly	3	
13	Local Application of National Issues	9	9	n/a	n/a	n/a	n/a	Weekly	3	
14	Emergency	1, 5, 7, 9	Fax	5	n/a	8	10	Daily	8	Update as needed
14	Public Impact Information	5, 9	Fax	5	n/a	8	n/a	Quarterly	6	
14	Pocketbook Issues	5, 9	Fax	5	n/a	8	n/a	Quarterly	6	
15	Regulation Compliance Guidance	3, 5, 9,	9	3	5	n/a	n/a	Monthly	7	National
15	Health/Economic Impacts	2, 3, 9	3	9	2	n/a	n/a	Monthly	6	Regional

Table A -- Media Interests, Pittsburgh, PA -- March 4, 1999

15	Regulatory Status	3, 9	3	9		n/a	n/a	Quarterly	9	National
16	Air	1, 7	7	2	1	4	10	Weekly	5	
16	Water	1, 2, 7, 9	7	2	1	4	10	Weekly	5	
16	Land	1, 2, 5, 7	7	2	1	4	10	Weekly	5	

Table A -- Environmental Organizations, Salisbury, MD -- March 11, 1999

No.	Media	How to Get	Best	2nd Best	3rd Best	Worst	2nd Worst	Updated	Media Information Rating	Comments
17	Jurisdiction Issues	1, 2, 3, 5, 7, 9	9	Conferences	n/a	n/a	n/a	Yearly	2	Coastal plain
17	Contacts	3, 5, 7, 9	n/a	n/a	n/a	n/a	n/a	Yearly	1	Coastal plain
17	Public Education	1, 2, 3, 4, 5, 7, 9	News releases	7	n/a	n/a	n/a	Yearly	3	Coastal plain
18	Agency Responsibilities	1, 3, 4, 5, 7, 9	9	3	4	8	n/a	Yearly	n/a	
18	Contacts	3, 4, 5, 9	9	3	4	8	n/a	Quarterly	n/a	
18	Education	3, 6, 7, 9	9	7	3	8	n/a	Quarterly	n/a	
19	Water	1, 2, 3, 5, 7, 9	3	5	9	4	n/a	Yearly	7	Our organization involves costal Delmarva Ecosystem
19	Toxics	1, 2, 3, 5, 7, 9	5	3	9	n/a	n/a	Yearly	2	
19	Wetland Protection	3, 5, 7, 9	9	3	5	n/a	n/a	Yearly	n/a	

Table A -- Small Business, York, PA -- March 16, 1999

No.	Media	How to Get	Best	2nd Best	3rd Best	Worst	2nd Worst	Updated	Media Information Rating	Comments
20	Easily Understood Regulations	3	3	n/a	n/a	n/a	n/a	n/a	2	
20	New Information About Regulations	3	3	n/a	n/a	n/a	n/a	n/a	n/a	
20	Training Seminars on Regulations	3	3	n/a	n/a	n/a	n/a	n/a	n/a	
21	Plain Sense - English Guides	3, 5, 9	3	Fax	9	6	10	Quarterly	3	
21	How to Do - Easy 1-2-3 Step Fashion	3, 5, 9	8	3	Fax	4	1	Quarterly	3	
21	Common Practices - Types of Technology to Improve Our Processes	3, 5, 9	3	Fax	9	10	1	Quarterly	3	
22	What Can or Can't Be Done in Layman's Terms	3, 5	3	5	n/a	7	1	Yearly	4	Local, state, national
22	Uniform Enforcement	3	7	3	n/a	10	8	Yearly	4	Local, state, national
22	Talk With Industry Leaders Prior to Regulation Enactment	3, 5, 9	3	5	9	7	1	Yearly	4	Local, state, national
23	Specific to Industry -- How To	3, 5, 9	5	3	9	10	4	Monthly	2	

Table A -- Small Business, York, PA -- March 16, 1999

23	Who to Get Information From	1, 2, 3, 5, 7, 9	7	1	3	10	4	Monthly	2	
23	What Type of Product or Equipment are Capable of Meeting Regulations	3, 5, 9	5	3	9	10	4	Monthly	2	
24	Easy Understanding of Regulations	9, 3, 5	9	3	5	1	2	Quarterly	3	
24	Proven Ways to Comply With Regulations	9, 3, 5	9	3	5	1	2	As needed	n/a	
24	Working Together to Meet Regulations	9, 3, 5	9	3	5	1	2	Daily	5	
25	Upcoming Regulations for Body Shops	3, 5, 8, 9	8	3	n/a	6	10	Yearly	4	
25	Stakeholder for Auto Repairs	3, 8	8	3	n/a	2	4	Quarterly	4	
25	Paint - VOC Tracking	8	8	n/a	n/a	10	n/a	n/a	3	

Table A -- Environmental Educators, Frederick, MD -- March 18, 1999

No.	Media	How to Get	Best	2nd Best	3rd Best	Worst	2nd Worst	Updated	Media Information Rating	Comments
26	Population	2, 3, 6, 7, 9, 10	9	3	2	5	n/a	Quarterly	n/a	Graphs, tables, charts, complete numbers
26	Water	2, 3, 6, 7, 9, 10	2	9	3	5	8	Weekly	n/a	Graphs, tables, charts, complete numbers
26	Disease Control (outbreaks)	2, 3, 6, 7, 9, 10	7	2	9	5	8	Weekly/ Daily	n/a	Graphs, tables, charts, complete numbers
27	Be Accessible	2, 3, 6, 7, 9	6	2	9	8	5	Quarterly	2	
27	Teacher Training	2, 6, 9	6	2	9	7	8	Quarterly	2	
27	Money and Equipment	2, 6, 9	6	2	9	7	8	Quarterly	2	
28	Web/Internet Sites	3, 8, 9	3	9	8	1	2	Monthly	4	Local, state, national
28	Databases/ Modeling	3, 8, 9	3	9	8	1	2	Monthly	4	State, national, global
28	Listserv -- Expert Access	3	3	n/a	n/a	1	2	Monthly	3	State, national
29	Local Data	3, 9	3	9	n/a	5	1	Monthly	n/a	By county
29	Means of Data Sharing	2, 3, 9	3	9	2	8	10	Monthly	n/a	By county
29	Charts, Maps, Posters	3, 4, 9	3	9	4	5	10	Quarterly	n/a	By state

Table A -- Environmental Educators, Frederick, MD -- March 18, 1999

30	Current Data	3, 5, 8, 9	3	5	9	7	4	Quarterly	2	Local areas, national
30	Expertise, Training, Access	2, 5, workshop	Work shop	2	n/a	7	9	Yearly	1	Summer training programs, internships
30	Resources	2, 5, 9, mail	2	Mail	9	7	4	Yearly	1	Grants for special projects
31	Local Data Collection	3, 6, 9	3	6	9	6	n/a	Quarterly	4	
31	Publications	4, 6, 8, 9	Mail	6	8	Bulk mail	n/a	Quarterly	3	
31	Internet Sources, Web Sites, Environmental Activities	3, 8	3	Mail	8	n/a	n/a	Monthly	2	
32	Water Quality Standards	2, 3, 4, 5, 6, 7, 8, 9, 10	9	2	8	1	10	Monthly	4	
32	Regulations for Food Products	1, 2, 3, 4, 5, 6, 7, 8, 9	9	2	8	1	10	Weekly	2	
32	Pollution Data (air, water, land)	2, 3, 4, 5, 6, 7, 8, 9, 10	9	2	8	1	10	Monthly	4	
33	Population/ Demographics	3, 5, 9	9	5	3	1	7	Twice per year	1	Local information and national (for comparison)
33	Water Quality	3, 5, 9	9	5	3	1	7	Twice per year	1	Local information and national (for comparison)
33	Area Experts/ Contact Information	3, 5, 9	9	5	3	1	7	Twice per year	1	Local experts

Table B -- Librarians, Charlottesville, VA -- February 23, 1999

No.	EPA Grade	Age	Gender	Grade	Lang	Race	TV	Cable	Home Comp	CD-ROM	E-mail	Internet	Use	Work Comp	CD-ROM	E-mail	Internet	Use	Newspaper	# in Home
1	3	46	F	GW	E	W	Y	Y	Y	N	N	N	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2*	8	48	M	GW	E	W	N	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
3*	6	57	M	GW	E	W	Y	Y	Y	Y	Y	Y	6	Y	Y	Y	Y	8	Y	2
4*	5	38	F	GW	E	AA	Y	Y	Y	Y	Y	Y	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a
5*	8	38	F	GW	E	W	Y	N	Y	Y	Y	Y	8	Y	Y	Y	Y	8	Y	1
6	5	60	F	SC	E	W	Y	N	N	n/a	n/a	n/a	n/a	Y	N	N	N	n/a	Y	2
7	n/a	52	M	GW	E	W	Y	Y	Y	Y	Y	Y	1	Y	Y	Y	Y	8	Y	3
8*	3	34	F	GW	E	W	Y	Y	Y	Y	Y	Y	7	Y	Y	Y	Y	8	N	2
9	5	36	M	FC	E	W	Y	Y	Y	Y	Y	Y	6	Y	Y	Y	Y	8	Y	5
10	4	32	F	GW	E	W	Y	Y	Y	Y	Y	Y	8	Y	Y	Y	Y	7	Y	2

2. The image of the EPA needs to be projected as the protector of the environment for the common man. Business deserves consideration for its needs, but not at the cost of our environmental quality.
3. Web site has shown enormous improvement in last few years. Please continue to expand it and include environmental data to the local level whenever possible.
4. I'd like to have better topical access to EPA's databases and a better description of its publications/report categories.
5. On www: provision of regulations/laws in summary format with links to GPO Access to USCODE/CFR. Concerned about archival issues of electronic information and ensuring that publications in whatever format are provided to the Federal Registry Library Program.
8. There really needs to be a "one-stop shop" for information; if info. is not actually provided in one location, there should at least, be info. on where to get info.

Table B -- Media Group, Pittsburgh, PA -- March 4, 1999

No.	EPA Grade	Age	Gender	Grade	Lang	Race	TV	Cable	Home Comp	CD-ROM	E-mail	Internet	Use	Work Comp	CD-ROM	E-mail	Internet	Use	Newspaper	# in Home
11	9	47	M	GW	E	W	Y	Y	Y	Y	Y	Y	6	Y	Y	Y	Y	8	Y	4
12	8	36	F	GW	E	W	Y	Y	Y	Y	Y	Y	7	Y	Y	Y	Y	8	Y	3
13	3	38	M	GW	E	W	Y	Y	Y	Y	Y	Y	8	Y	Y	Y	Y	8	Y	1
14	8	53	M	GW	E	W	Y	Y	Y	Y	Y	Y	8	Y	N	N	N	2	Y	1
15	8	32	M	GW	E	W	Y	Y	Y	Y	Y	Y	6	Y	Y	Y	Y	8	N	2
16	5	38	M	FC	E	W	Y	Y	Y	Y	N	Y	1	Y	Y	Y	Y	1	Y	6

Table B -- Environmental Organizations, Salisbury, MD -- March 11, 1999

No.	EPA Grade	Age	Gender	Grade	Lang	Race	TV	Cable	Home Comp	CD-ROM	E-mail	Internet	Use	Work Comp	CD-ROM	E-mail	Internet	Use	Newspaper	# in Home
17	3	71	F	FC	E	W	Y	Y	N	n/a	n/a	n/a	n/a	N	n/a	n/a	n/a	n/a	Y	2
18	3	82	M	SC	E	W	Y	Y	N	n/a	n/a	n/a	n/a	N	n/a	n/a	n/a	n/a	Y	2
19	5	52	F	FC	E	W	Y	Y	Y	Y	Y	Y	5	Y	Y	Y	Y	8	Y	2

Table B -- Small Business, York, PA -- March 16, 1999

No.	EPA Grade	Age	Gender	Grade	Lang	Race	TV	Cable	Home Comp	CD-ROM	E-mail	Internet	Use	Work Comp	CD-ROM	E-mail	Internet	Use	Newspaper	# in Home
20*	2	54	M	12	E	W	Y	Y+	Y	Y	Y	Y	7	Y	Y	Y	Y	9	Y	2
21*	3	46	M	GW	E	W	Y	Y	Y	Y	Y	Y	8	Y	Y	Y	Y	n/a	Y	4
22*	4	55	M	SC	E	W	Y	Y	Y	Y	N	Y	4	Y	Y	Y	Y	6	N	2
23	2	51	M	12	E	W	Y	Y+	Y	Y	Y	Y	7	Y	Y	Y	Y	8	Y	4
24	3	57	M	SC	E	W	Y	Y	Y	Y	Y	Y	7	Y	Y	Y	Y	7	Y	2
25*	3	42	M	8	E	W	N	N	Y	Y	Y	Y	6	Y	Y	Y	Y	6	Y	12

+ Satellite Dish
20*. K.I.S.S.
21*. I believe that too much attention is paid to organizations like Green Peace and the Sierra Club, while small businesses are not always contacted to see what the effects would be on the creation and sustainment of the job force. Small business is the backbone of America and should be brought into plan in a much greater fashion so as to sustain growth.
22*. Information is provided -- not in a manner that is understood by most that receive it.
25*. Keep information simple. So all can understand -- enforce all, not just some shops.

Table B -- Environmental Educators, Frederick, MD -- March 18, 1999

No.	EPA Grade	Age	Gender	Grade	Lang	Race	TV	Cable	Home Comp	CD-ROM	E-mail	Internet	Use	Work Comp	CD-ROM	E-mail	Internet	Use	Newspaper	# in Home
26*	n/a	24	M	FC	E	W	Y	Y	Y	Y	Y	Y	7	Y	Y	Y	Y	5	Y	2
27	3	38	F	GW	E	W	Y	Y	Y	Y	Y	Y	7	Y	Y	Y	Y	8	Y	4
28*	4	52	M	GW	E	W	Y	Y	Y	Y	Y	Y	7	Y	Y	Y	Y	6	N	1
29*	n/a	35	F	GW	E	W	Y	Y	Y	Y	Y	Y	4	Y	Y	Y	Y	8	N	2
30*	2	53	M	GW	E	W	Y	Y+	Y	Y	Y	Y	7	Y	Y	Y	Y	8	N	5
31	3	44	M	GW	E	W	Y	Y	Y	Y	Y	Y	6	Y	Y	N	Y	5	Y	4
32*	2	51	F	GW	E	W	Y	Y	Y	N	N	N	n/a	Y	Y	Y	Y	6	Y	4
33*	1	47	F	GW	E	W	Y	Y	Y	Y	N	N	n/a	Y	Y	Y	Y	8	N	4
34	5	30	M	GW	E	W	Y	Y	Y	Y	Y	Y	7	Y	Y	Y	Y	7	Y	2

26*. Bias is a big concern for my students. They are constantly asking for the right answer. They have a problem trying to decide for themselves after weighing all of the information. They want to be told the "right" answer when it is not as simple as that.
28*. Need to develop a greater understanding of environmental problems. Need to generate a population willing to commit themselves to realistic environmental change in attitude and ethic.
29*. I would like a means to share the data collected on local water quality of streams to make our data more meaningful to the students and as a means of comparison of our data to other data in the region.
30*. Please make information balanced, that is, don't just give everything an environmentalist slant.
32*. A brochure or booklet of environmental protection agency concerns and focus issues would be helpful. Data (using graphs) of pollution of different kinds would be good for students to study and compare.
33*. EPA plays a critical role in solving environmental problems. Students need to view EPA as accessible and user-friendly.

Appendix IV
Comparison to the CEIS/EMPACT Meetings

The CEIS/EMPACT national groups included experience with participants from the same stakeholder groups as several Region III groups, e.g. small environmental organizations, environmental educators, and small business groups. The Region III librarians and media groups were unique and give an important perspective for understanding these vital stakeholders. Individual group interests are highlighted in the individual summary documents.

There is an overall "high tech/ high touch" trend in the national Phase III groups. Participants understand that the Internet and other "high tech" options are a vital addition to current and future information resources. However, they universally agree that these "high tech" options need to have a "high touch" element — people connected to them. For example, frequently participants across the national groups mention that they would like to be able to get to a person more quickly when they are trying to find information through a Web site or a phone number.

Environmental Organizations

Environmental organizations share a number of comments in the Region III and the national groups in Portland, Maine, and San Francisco, California. The groups agree that they need to find the correct people to contact to get information. These contacts become an indispensable part of their information acquisition network.

The national groups tend to look to the Internet to provide some of the "high tech" solutions they seek. The Region III group is less Web-focussed and contend that, in addition to the "high tech" approach, the EPA needs to ensure that its publications continue and that references are available to identify resources. The Region III group indicates that smaller, more rurally located organizations may not have Internet capabilities and need to rely on contacts and published information to function. The Portland group agrees with this concern, urging EPA *not* to assume that everyone has a computer; EPA should use a variety of media to reach its stakeholders.

One interesting difference between the groups is that the Region III group has substantially lower average Internet access than the other groups. In fact, they have the lowest level of Internet access of all the Region III and national groups. This group offers a prime example of the population of environmental organizations with limited resources to rely upon for their information needs.

Small Business

The Region III business group included representatives of small and medium sized businesses. This differed slightly from the national public meetings, which included representatives from several larger companies and agencies. The most apparent, different priority for the Region III small business participants was a much larger focus on regulatory information and related financial burdens. The small business owners repeatedly returned to a variety of regulatory concerns including clearly understanding regulations, identifying appropriate regulations, establishing appropriate compliance measures, and the cost of compliance. In this respect, Region III small business participants agreed strongly with agricultural stakeholders meetings convened by CEIS/EMPACT in Fort Collins, Colorado and Kansas City, Missouri. In contrast, the representatives of larger companies did not share the same level of concern.

Like other groups, these groups found similarities in their desire for "high tech/high touch" response to their information needs. Both groups were looking for more ways of getting information, more pro-active information distribution by EPA, more methods of information acquisition, and more people to provide information and interpretation of regulations.

Environmental Educators

The Region III and national educator groups differ in their make-up. The Region III group consists of only educators, whereas the national group includes both teachers and administrators. The national group also includes representatives from Washington, D.C. based educational advocacy organizations. These differences in participants result in strong differences between the two groups. The Administrators in the CEIS/EMPACT group express concerns related to their institutions being in compliance with EPA regulations. In contrast, the educators in the Region III group have none of these concerns; they are primarily classroom teachers.

The teachers in both groups agree that there is a need for interpretation of data, technical and expert support, and easy-to-reach contacts to support their educational efforts and curriculum development. The teachers in both groups are in agreement over the need for educational products and interpreted data for curriculum development. The groups also seek ways to contact EPA's technical staff and other scientists involved in research so that they can ask questions and get explanations of data they encounter. These contacts are important to teachers to tap the raw data and add expertise to EPA data collections and resources. They are also interested in technical support for field trips and data-gathering work done by students. In addition, both groups of teachers are in search of contact rituals to improve their networks and have on-going contact to be aware of changes and improvements from EPA.